ENGINEERING NEWS-RECORD

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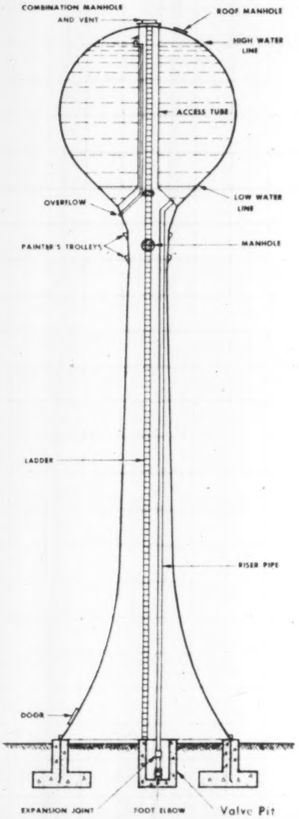
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HIGH WATER LINE
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RISER PIPE
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EXPANSION JOINT
FOOT ELBOW
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When our engineers designed the Horton Watersphere, they introduced a method of water storage that's as modern in appearance as it is functional in operation.

Basically, the Watersphere is a welded-steel elevated tank with the inherent advantages of a gravity water supply, dependable fire protection and uniform water pressures. But it provides more than that. The Watersphere gives your city a modern, progressive look.

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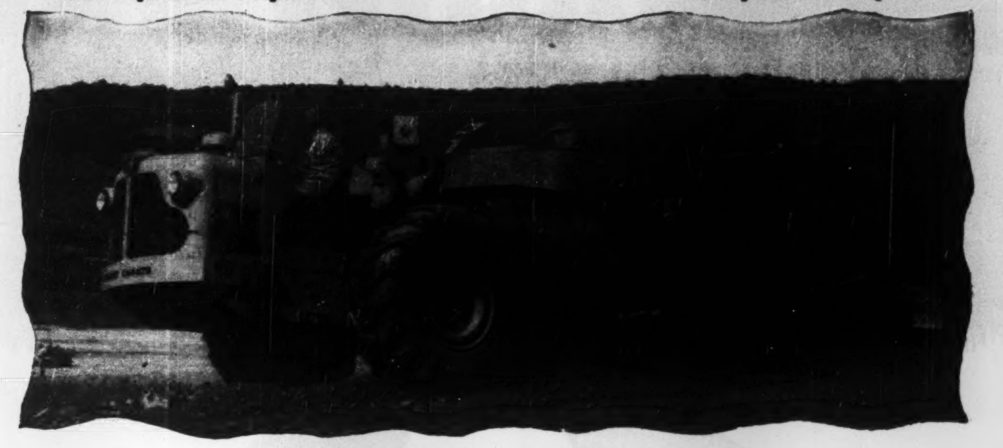
BUDA 6-DAS 844

280 h.p. at 2100 r.p.m.

MORE POWER

CUMMINS NHS-600

275 h.p. at 2100 r.p.m.



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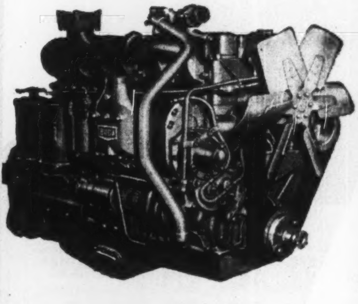

BUDA DIESEL 6-DAS 844—
Here's a newer, bigger Buda Diesel that gives you 20 h.p. per struck yard of capacity . . . a new high in power and performance!

HERE'S a power boost for the already powerful Motor Scraper . . . a step-up from 225 h.p. to your choice of either 275 or 280 h.p.! Two great Diesels, Buda or Cummins, whichever fits your set-up best. Power to spare in the toughest going! Power that's useable through a heavier final drive! Power that provides new highs in average haul road speeds!

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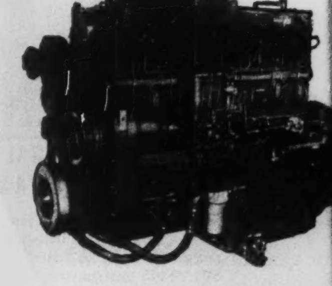
Don't overlook the profit potential of the TS-200—the little earthmoving giant in the 9 to 12 yard class, now available with the Cummins HRB-600, 165 h.p. Diesel.



CUMMINS DIESEL NHS-600—
275 h.p. that steps up Motor Scraper production performance and profits to new heights!

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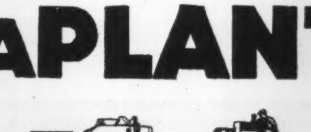
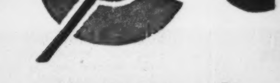
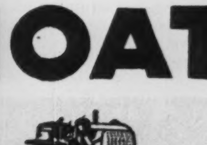


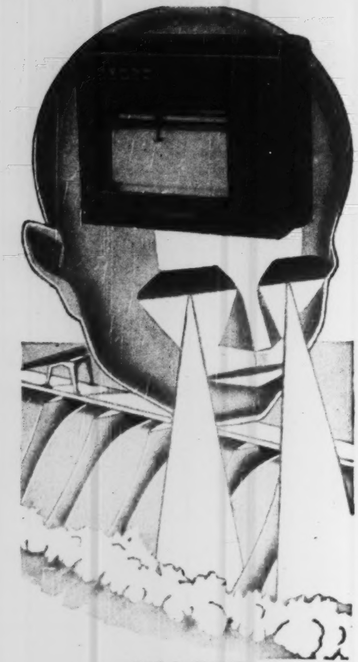
Cable-operated Scrapers in 6-, 8- and 14-yd. sizes for all makes of track-type tractors.



2- and 4-yd. Scrapers for track-type and rubber-tired industrial tractors.



Hydraulic and Cable-operated Dozers.



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ENGINEERING NEWS-RECORD

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Volume 145 **NOVEMBER 16, 1950** **No. 20**

WALDO G. BOWMAN
Editor

FEATURES IN THIS ISSUE

Builder Readies Tap on Hudson 32
Submersible Hydro Plants Increase Low-head Output 35
Investigations Begin for Delaware Crossing 36
Michigan Issues Report on Pavement Design Study 38
War Memorial to Serve Many Purposes . . . . F. S. Merritt 39
Bridge and Tunnel Promise Traffic Relief at Norfolk 44
Perspective—Taxes and the Escape Hatch 132

DEPARTMENTS

Construction Week 17
Construction Trends 19
Editorials 21
News of the Week 23
Book Reviews 47
Reader Comment 48
Field and Office 51
Developments Abroad 57
Municipal Affairs 60
Men and Jobs 64
Education and Research 71
Obituaries 74
Meetings 77
Unit Prices 81
Construction Reports 82
New Products 121

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B.F. Goodrich

Hauling giant loads over blasted rock this B. F. Goodrich tire outlasts them all

IN ROAD contracting service in Tennessee, North Carolina and Virginia, the equipment pictured above is engaged in the tire-killing business of working its 32,000 pounds over the sharp rock of blasted terrain. Add a total load weight of 16 cubic yards of rock and earth, and it's easy to understand why bruises and blowouts make off-the-road tires a major cost item in such equipment.

Such was the story, at least, until B. G. Young & Sons of Johnson City, Tenn., owners of the fleet, turned to B. F. Goodrich *double nylon shock shield* tires to combat the high cost of tire mortality in such rugged service. Since then, costly road delays and work interruptions have been cut to a fraction of what they had formerly considered normal. The BFG Universal tires shown above, for example, have been in service for well over a year—*and not one has yet been removed from its wheel.* Mr. B. G. Young says, "The service we obtain from B. F. Goodrich tires with nylon shock shield is far and beyond anything we have ever experienced before."

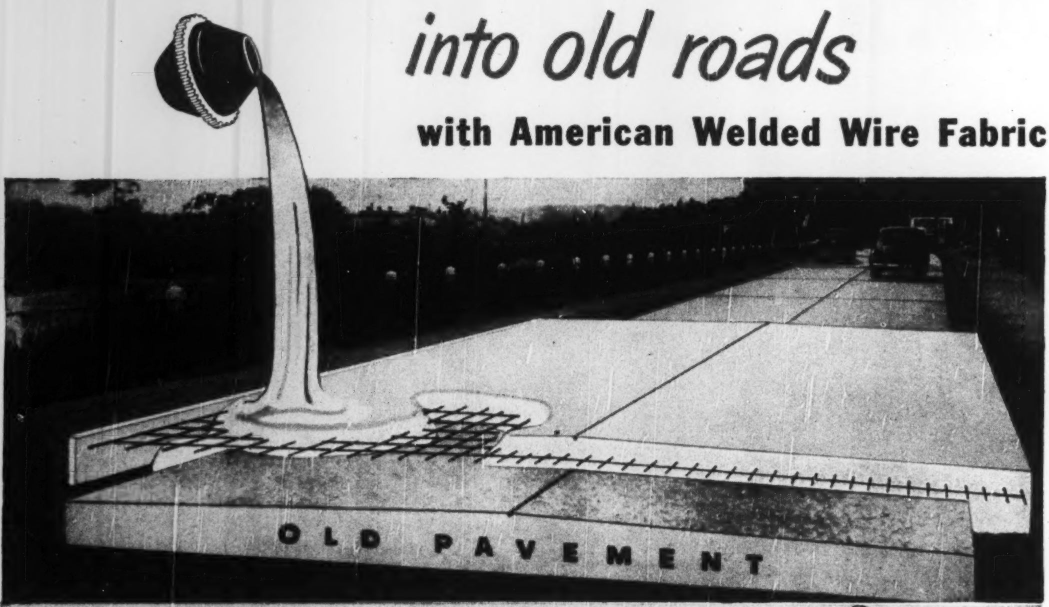
Only B. F. Goodrich off-the-road tires have the *double nylon shock shield.* (It's patented.) Layers of nylon cord, built between the tread and body plies, shield the cord body by smoothly distributing shocks and strains. This plus factor of extra mileage and service hours in BFG tires is yours at no extra cost. Then, too, because there's a specially-designed deep tread for every need, you can look forward to good traction far beyond the time when ordinary tires must be changed over to service on free-rolling wheels.

So see your B. F. Goodrich dealer. Specify BFG tires for your new equipment. Enjoy longer tire service and lower overhead offered you by *The B. F. Goodrich Company, Akron, Ohio.*

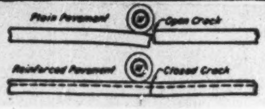
RESEARCH KEEPS
B.F.Goodrich
FIRST IN RUBBER

Build New Life into old roads

with American Welded Wire Fabric



The large composite picture shows how existing roads can be widened and strengthened by resurfacing with concrete, reinforced from shoulder to shoulder with American Welded Wire Fabric. The small sketches show how Welded Wire Fabric prevents progressive damage by holding cracks tightly closed.



When your old roads prove unable to handle the increased weight and volume of today's traffic, you often can restore them to full service without incurring the excessive cost of replacing the entire road. Many highway engineers have modernized their old roads by surfacing them with concrete reinforced with American Welded Wire Fabric.

Using the old pavement as a foundation, they have built wider roadways to accommodate a greater number of vehicles. The reinforced concrete slabs are stronger — readily withstand the incessant pounding of heavy loads. A new reinforced concrete surface provides better visibility and insures greater safety than other types of resurfacing.

In resurfaced concrete roadways, the many small, closely spaced steel members of American Welded Wire Fabric fortify all parts of the slab against stresses and strains in all directions. The rate of cracking is sharply reduced and such cracks as do occur are held tightly closed, preventing progressive damage to the pavement.

When you are planning to build new life into old roads, our technical staff will be glad to supply complete data on specific designs and standard styles of U·S·S American Welded Wire Fabric that are available. Write to our nearest sales office today, you incur no obligation.

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Every concrete paving job needs

USS **AMERICAN WELDED WIRE FABRIC** *reinforcement*

UNITED STATES STEEL

Before you buy a diesel engine

...be sure and read this booklet!

10 QUESTIONS

to ask
a diesel engine
salesman

MURPHY
DIESEL

A sound basis of comparison is essential to the selection of the proper diesel engine to meet your power requirements. And that's just what the booklet *"10 Questions to Ask a Diesel Engine Salesman"* gives you. If you want economy, dependability and long engine life this booklet will show you what to look for in a diesel engine.

In addition, the *"10 Questions"* booklet describes fully the Murphy Diesel line of heavy duty "true" diesel engines, giving design details and basic specifications. No diesel power user or prospective diesel power user should be without this helpful 28-page booklet. Write for your copy, mentioning your company affiliation and position.

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now in our 90th year.

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NEWS BRIEFS

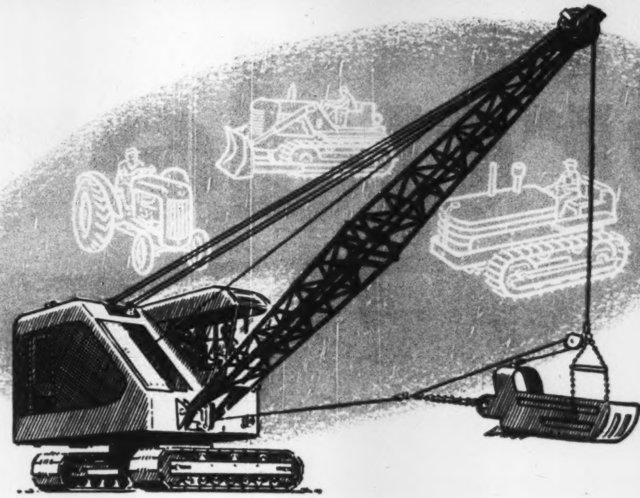
Trickle treatment—Citizens of Upland, Calif., who are delinquent on their water bills have been given a new incentive to pay up. City Manager R. G. Manley has announced that crews are busy inserting discs in water pipes of delinquent householders. The discs have a hole in the center, permitting passage of only a small stream of water. Manley figures that householders, wearied by the slow process of getting a drink or a bath via the trickle which will henceforth issue from their faucets, will rush to pay up back bills.

For the (baby) carriage trade—The mothers of St. John, N. B., forced a change in plans for a viaduct now being constructed by the city, with Richard & B. A. Ryan, Montreal, as contractor. At a cost of $8,000, a ramp has been substituted for stairs at each end to allow for movement of baby carriages up and down. The mothers had protested that with stairs baby carriages could be moved up and down only with great difficulty. The $900,000 concrete viaduct is to eliminate a grade crossing in front of the local railroad station.

Circumferential highway—Plans for the final link in the 45-mile, Route 128 Northern Circumferential Highway from Gloucester to Wellesley, Mass., have been announced by Gov. Paul A. Denver. (ENR Oct. 12, p. 43). A section between North Beverly and Gloucester will be constructed at a cost of $4,500,000, financed by the recently-enacted, second $100,000,000 highway bond issue. The project includes 10 highway bridges.

Divided highway record—According to C. H. Purcell, California's Director of Public Works, "California built 26 percent of all of the divided state highways constructed in the United States from 1945 to 1948," the last period for which comparative figures are available. The state built 197 mi in the three years; since then it has placed 345 mi under construction.

Low bridge!—The Illinois Central R. R. has filed suit in Federal Court at Memphis, Tenn., asking $21,799.89 damages against the Industrial Marine Services. The suit is the result of an accident on the Cumberland River near Eureka, Ky., last Jan. 12 in which a tug and two barges, owned by the defendant, hit a drawbridge and damaged it so that the railroad lost the use of the bridge.



HEAVY-DUTY FASTENERS FOR THE HEAVYWEIGHTS

When the going's rough and rugged, you need the extra strength and quality of Lamson heavy-duty fasteners.

Many manufacturers of heavy road-building, agricultural and earth-moving machinery use Lamson fasteners as original equipment. What better guarantee could you have that Lamson fasteners are your *best bet* for repair and replacement use?

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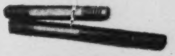
"1035" SET SCREWS: Cup point type, hardened, heat-treated.

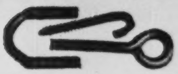
COTTER PINS: Steel, Brass, Aluminum and Stainless Steel.

TRACTOR BOLTS: Made to manufacturers' standards.

"1035" CAP SCREWS: Hi-Tensile heat-treated steel.

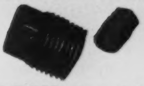


MILLED STUDS: Concentric, accurate, in a full range of sizes.



"BENT" BOLTS: Including U Bolts, Eye Bolts, Hook Bolts, etc.

Wire Rope Clips: Hi-Center saddles, extra-strength U Bolts.

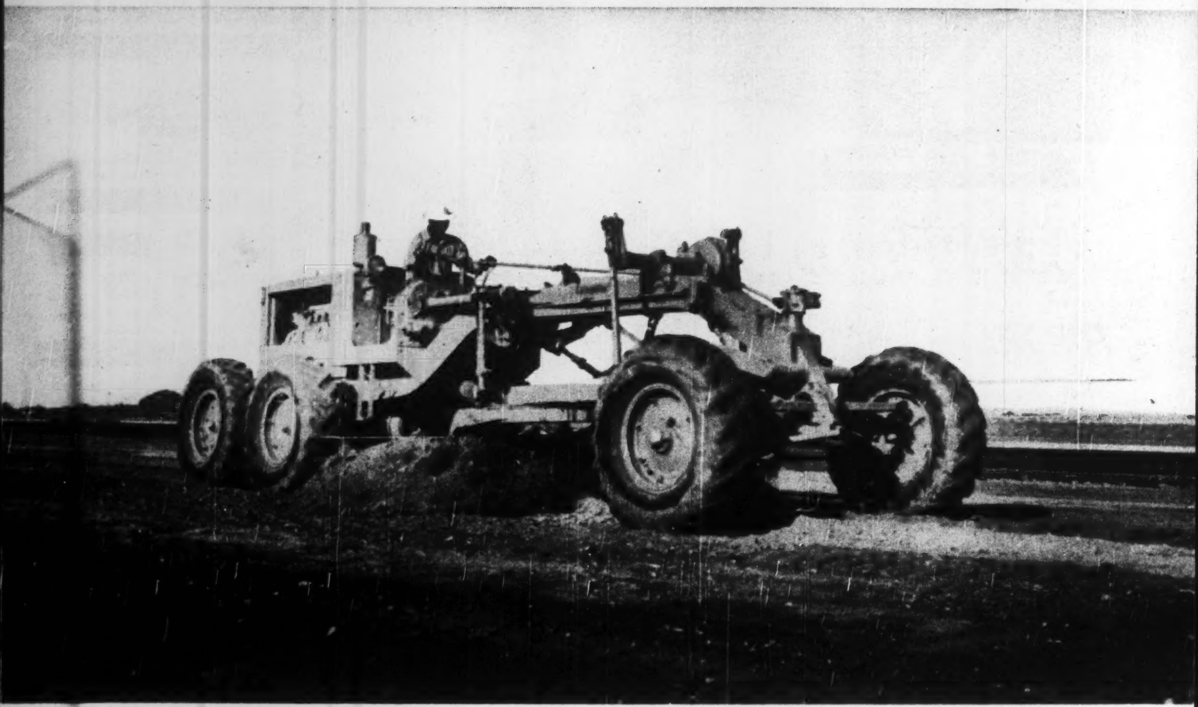


PIPE PLUGS: Forged Steel, heat-treated.

FOR MORE INFORMATION ON LAMSON *Money-Saver* FASTENERS...... CHECK COUPON and CLIP THIS STRIP

The Lamson & Sessions Company
1971 W. 85th St., Cleveland 2, Ohio

THE Grader



Exclusive bonus features, found only on "Cat" Diesel Motor Graders, make these balanced machines the best you can put on your payroll.

Of his "Cat" No. 12 Motor Grader, which moved more than 30,000 cubic yards of earth during the construction of the Contra Costa County Airport near Concord, Calif., owner Eugene G. Alves says: "I've operated 'Cat' equipment all my life. As far as I'm concerned, nothing can touch it; it's tops in equipment!" And Mr. Alves backs up his opinion by standardizing 100% with "Caterpillar" tools to cut down time to the bone and get better job results.

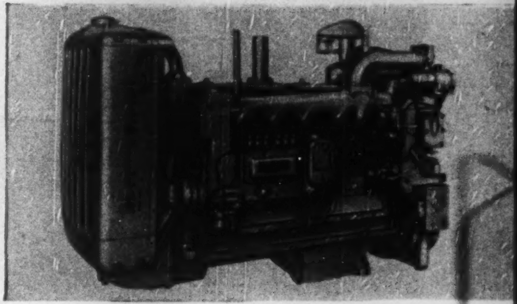
On the Contra Costa Airport job, the "Cat" No. 12 Grader has built roads, done grading and drainage structures, and made parking areas. With its engine, clutch, transmission, final drive and blade mechanism all *designed* and *built* by "Caterpillar," the machine has the balance and under-the-hide stamina to keep going the way you *hoped* it would when you bid on a job.

By the smooth, easy way "Caterpillar" Motor Graders work, you *know* that their left wheels know what their right wheels are doing. Ask your "Caterpillar" dealer to show you the "Cat" Motor Grader's exclusives.

CATERPILLAR TRACTOR CO. • PEORIA, ILLINOIS

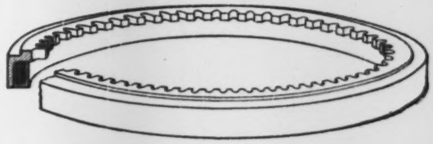
THAT'S IN A CLASS BY ITSELF

1 ***ONLY*** "Cat" Graders have "Cat" Diesel Engines for continuous service and economy of operation. It's part of balanced design that saves you operating dollars.

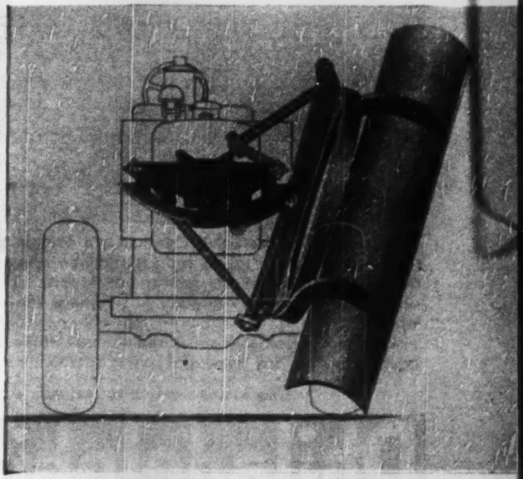


2 ***ONLY*** the "Caterpillar" Motor Grader line has no orphans. Stocks of parts are maintained for each member of the "Cat" Grader family regardless of age. They work in harness—not die on the vine. Your original investment is protected.

3 ***ONLY*** "Cat" Graders have a box-section blade supporting circle, made from a special angle produced on a "Caterpillar"-owned roll.



4 ***ONLY*** "Cat" Motor Graders provide such excellent visibility for the operator. Power control box is mounted low, lift gear is mounted against the dash. Clean frame design permits the operator to see toe and heel of the blade, sitting down.



5 ***ONLY*** "Cat" Graders have the long radius curved side shift rack that provides extra lateral shift to the blade assembly, together with the required vertical movement.

6 ***ONLY*** with "Caterpillar" equipment do you buy-in on the world-wide "Caterpillar" dealer service—adequate parts inventory and factory-trained servicemen to keep wheels, tracks and engine turning on location.

CATERPILLAR

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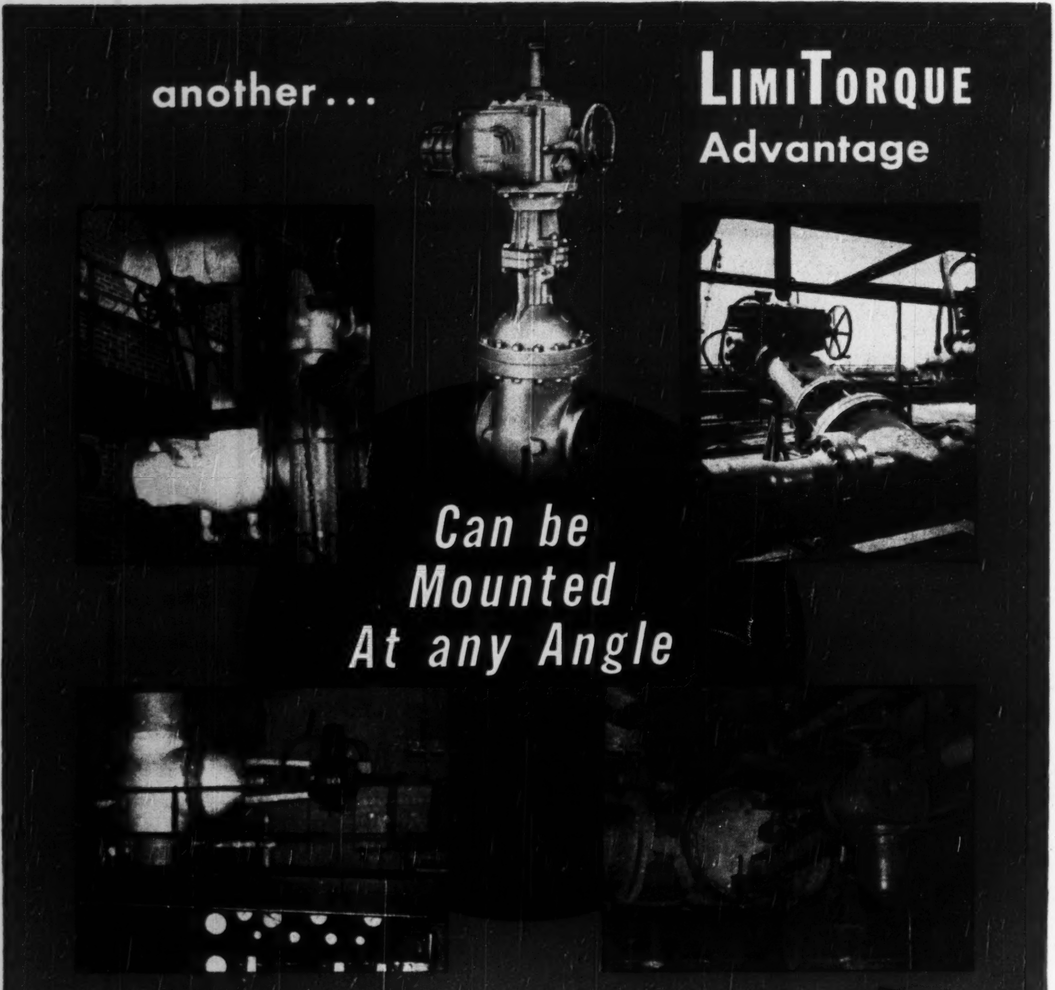
DIESEL ENGINES • TRACTORS • MOTOR GRADERS • EARTHMOVING EQUIPMENT



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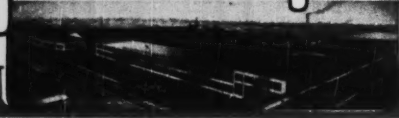
Philadelphia Gear Works, INC.



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Industrial Gears and Speed Reducers
LimiTorque Valve Controls

Enders Dam closure—With the closure of Enders Dam, the Bureau of Reclamation structure on Frenchman Creek, Nebraska, a lake has begun to form, which eventually will cover 3,200 acres. This new dam is one of the key structures in the development of the Republican River Valley.

THE COVER

There'll be clear sailing—portal-to-portal—for suburban buses and autos using the new Port Authority Bus Terminal and the Lincoln Tunnel in New York City.

Buses to and from New Jersey communities across the river will no longer have to struggle with rush-hour traffic on mid-town Manhattan streets. They'll ride non-stop on tunnel-to-terminal ramps when the block-square building (ENR Dec. 1, 1949, p. 23) opens for business Dec. 15. Autos will use a 450-ft length of ramp to rooftop parking areas.

Winter weather won't worry commuters; over ten miles of steel piping in the 1.6 acres of ramp roadways will carry 11,000 gal of a non-corrosive petroleum by-product heated to 170° F when snow or ice threatens. This heating system, with its plant in the terminal building, is designed to melt a snow falling at the rate of one inch per hour. Ramp drainage will be through insulated downspouts to sewers.

The westbound ramp (on right in photo) is 1,500 ft long; the eastbound, 1,540 ft. Roadways vary in width from 22 to 52 ft. Maximum grade is 7.5% for the 250 ft of ramp nearest the 10th Ave. tunnel-entrance plaza; average grade is 3 to 4%.

Carried on 55 structural steel and 28 reinforced concrete columns, the ramps have 9-in. thick concrete roadway slabs on structural steel floor systems through all but their lower ends. There the structures are wholly reinforced concrete. Roadway slab expansion joints are on 100-ft centers.

An insulating board 1¼ in. thick and in 4 x 8-ft sheets was used in forming roadway slabs. Each board has six steel loops sticking up from galvanized bolts to tie it to the concrete. Thus, the forms stay to become permanent heat insulation for the slab bottoms. The board used has a ⅛-in. thick hard coat both sides and so needs no finishing.

Corbetta Construction Co., New York, was general contractor on the superstructure; Gull Contracting Co., Inc., Flushing, N. Y., built the foundations. Harris Structural Steel Co., New York, put up the 2,180 tons of structural steel, and Heating Maintenance Corp. of New Rork fabricated and placed heating piping—both as subs to Corbetta.

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Heltzel BUILDS IT BETTER

SUPERIOR
ROAD & AIRPORT
Forms

Compare Heltzel forms with any other. Point for point Heltzel forms are outstanding in construction features and on-the-job advantages. Like all good equipment, they afford economies in working time while assuring a better job.

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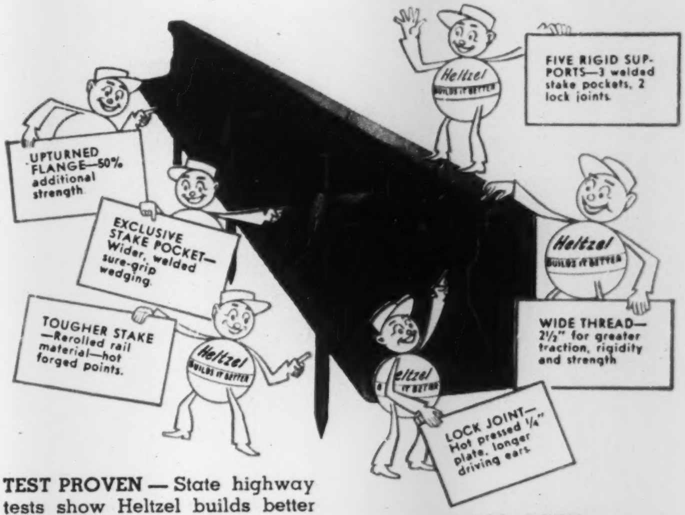
- MILITARY HIGHWAY FORMS
- DUAL DUTY AIRPORT-HIGHWAY FORMS
- ISLAND AND CATCH BASIN FORMS
- ROAD FORM ATTACHMENTS


FIVE RIGID SUPPORTS—3 welded stake pockets, 2 lock joints.
UPTURNED FLANGE—50% additional strength
EXCLUSIVE STAKE POCKET—Wider, welded sure-grip wedging.
TOUGHER STAKE—Rerolled rail material—hot forged points.
WIDE THREAD—2½" for greater traction, rigidity and strength
LOCK JOINT—Hot pressed ¼" plate, longer driving ears.
Heltzel BUILDS IT BETTER

TEST PROVEN — State highway tests show Heltzel builds better forms. Average results prove Heltzel 20% better.

JOB PROVEN — Veteran Heltzel forms can be seen on many jobs — they last longer. They don't wiggle and weave under pressure and movement of heavy equipment — they stake firmly and carry the load.

HELTZEL DUAL DUTY FORMS

Each dual duty form can be used to make two thicknesses of concrete slabs. Illustration above shows same form in upright position for 24" slab and side position for 20" slab. Sizes from 8" up.

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City__________ State__________

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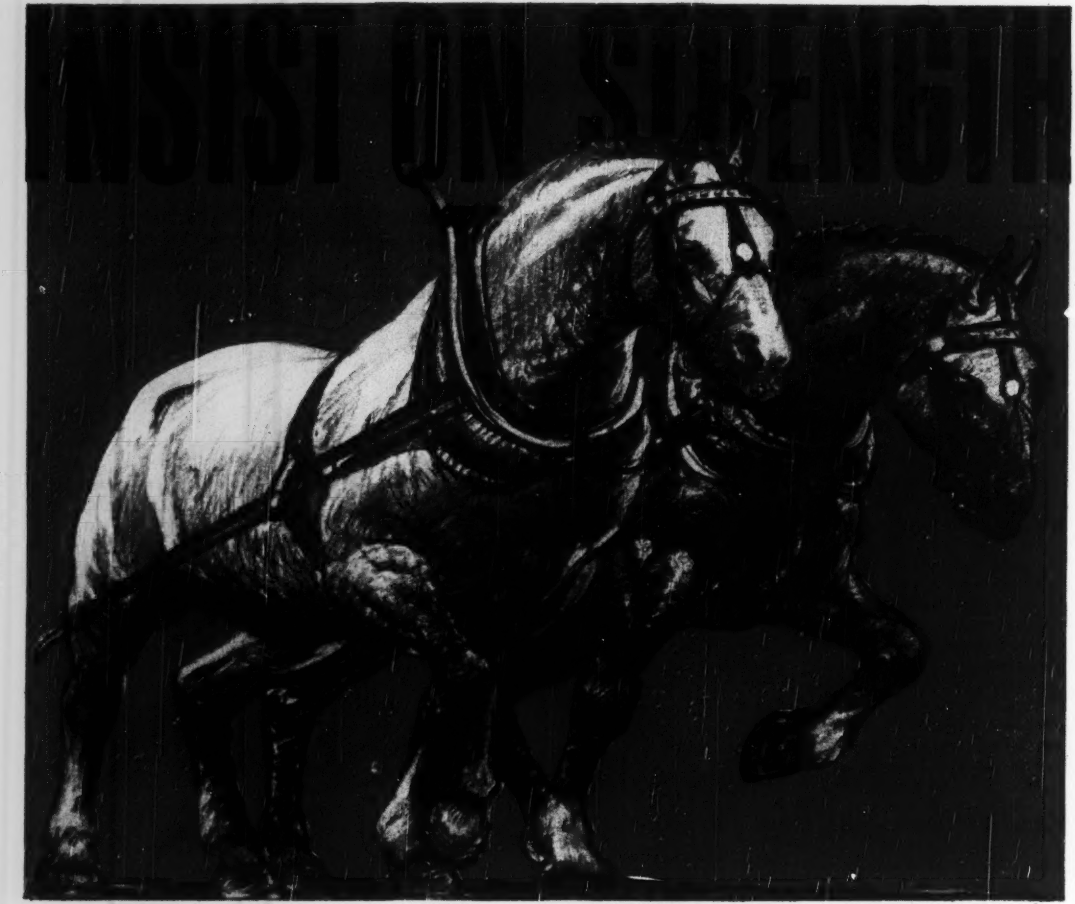

Like a Percheron draft horse cast iron pipe is known for strength

Long life and low maintenance cost of mains laid under city streets depend not only on effective resistance to corrosion but on definite strength factors. The four strength factors that pipe must have to withstand beam stress, external loads, traffic shocks and severe working pressures, are listed on the page opposite. No pipe that is deficient in any of these strength factors should ever be laid in paved streets of cities, towns or villages. Cast iron water and gas mains, laid over a century ago, are serving in the streets of more than 30 cities in the United States and Canada. Such service records prove that cast iron pipe not only resists corrosion but combines all the strength factors of long life with ample margins of safety.

CAST IRON PIPE

in pipe for city streets

No pipe that is deficient in any of the following strength factors should ever be laid under paved streets.

CRUSHING STRENGTH

The ability of cast iron pipe to withstand external loads imposed by heavy fill and unusual traffic loads is proved by the Ring Compression Test. Standard 6-inch cast iron pipe withstands a crushing weight of more than 14,000 lbs. per foot.

BEAM STRENGTH

When cast iron pipe is subjected to beam stress caused by soil settlement, or disturbance of soil by other utilities, or resting on an obstruction, tests prove that standard 6-inch cast iron pipe in 10-foot span sustains a load of 15,000 lbs.

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The toughness of cast iron pipe which enables it to withstand impact and traffic shocks, as well as the hazards in handling, is demonstrated by the Impact Test. While under hydrostatic pressure and the heavy blows from a 50 pound hammer, standard 6-inch cast iron pipe does not crack until the hammer is dropped 6 times *on the same spot* from progressively increased heights of 6 inches.

BURSTING STRENGTH

In full length bursting tests standard 6-inch cast iron pipe withstands more than 2500 lbs. per square inch internal hydrostatic pressure, which proves ample ability to resist water-hammer or unusual working pressures.

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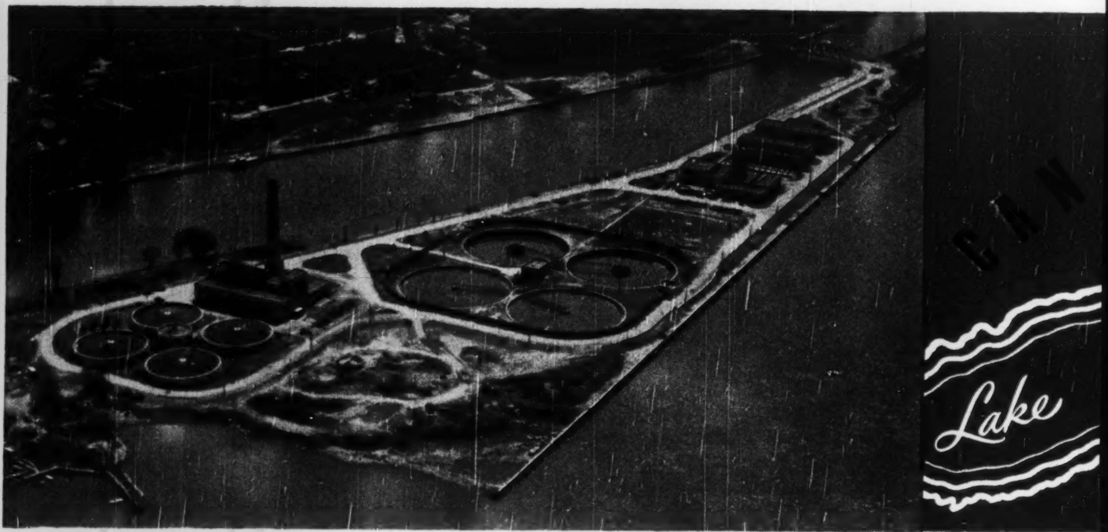
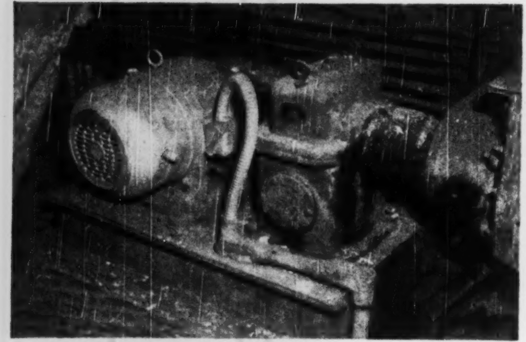
SERVES FOR CENTURIES

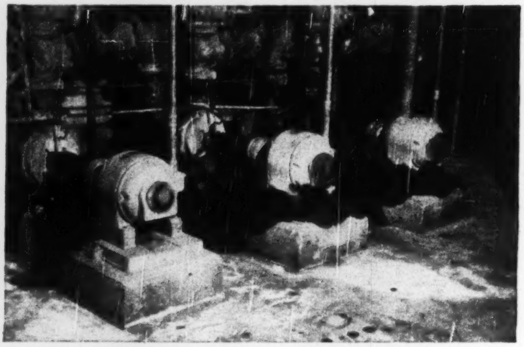
CLEAN WATERS *at*



Airview of the Bird Island Sewage Treatment Works at Buffalo, N. Y. Treatment includes pumping, screening, aeration, chlorination, sedimentation, sludge digestion and incineration.



A G-E 7½-hp induction motor drives a sludge mixer. With their extra protection against physical damage, electrical breakdown and operating wear and tear, G-E motors assure long life and high service continuity.



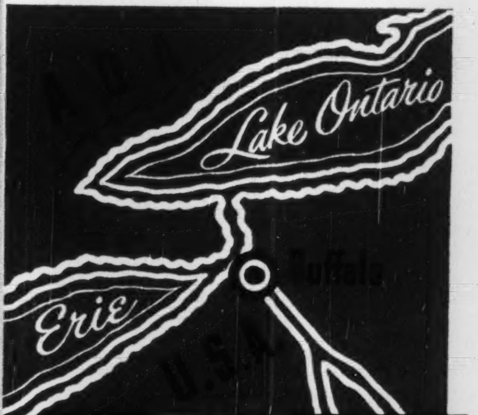
Three G-E 7½-hp splashproof induction motors drive filtrate pumps for vacuum filters. These motors have already given 12 years of service although constantly subjected to moisture from dripping and splashing.

GENERAL ELECTRIC

666-58

Buffalo HELP KEEP A TREATY

G-E Equipped Treatment Plant Guards International Waters

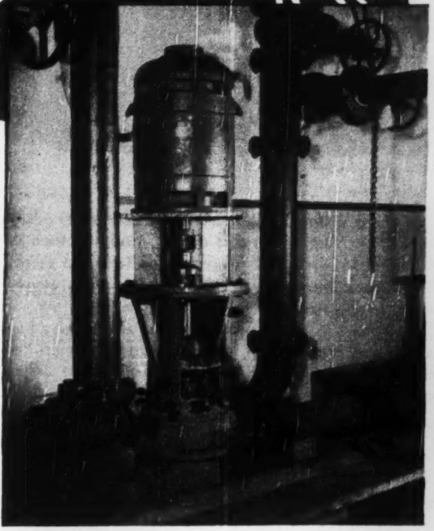


Since its dedication in 1938, Buffalo's sewage treatment plant has helped make good a U.S.–Canadian Treaty signed over 40 years ago to protect international waters from pollution. Located on Bird Island in the Niagara River, the plant has helped keep waters clean from Buffalo to Lake Ontario.

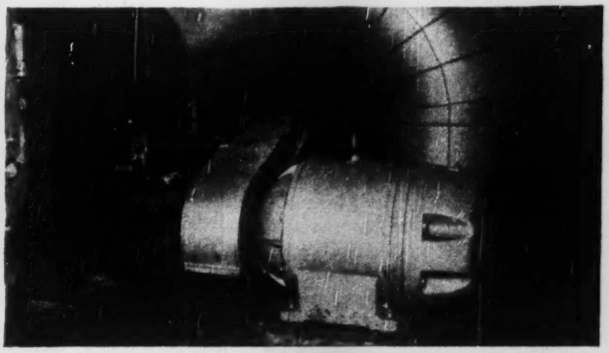
Plant officials attribute much of the success of the Buffalo plant's operation to the outstanding service given by some 100 General Electric motors. In many cases operating under the most severe conditions, the motors have given continuous and reliable performance.

General Electric can help your community get that new or improved sewage treatment plant by (1) assisting you and your consultant in formulating electrical plans, and (2) building public support through the use of G.E.'s full-color sound movie, *Clean Waters*.

Contact your General Electric representative early in the planning stage. *Apparatus Dept., General Electric Company, Schenectady, N. Y.*

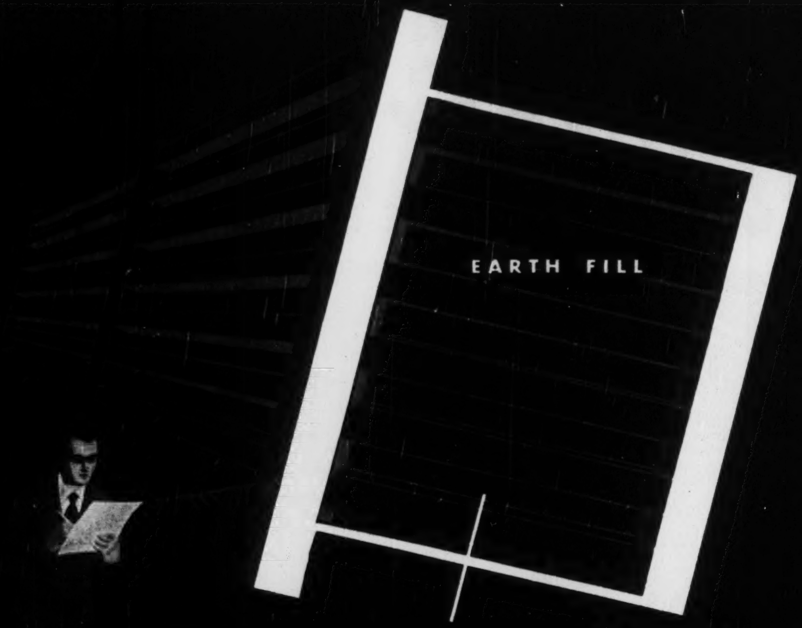


Sludge circulating pumps for the digester tank are driven by G-E 10-hp vertical drip-proof motors. G-E vertical motors now have improved bearing lubrication and double-end ventilation for longer life and more efficient operation.



This is one of the G-E 50-hp, totally enclosed, fan-cooled induction motors used to drive exhaust fans for the sludge incinerator. The corrosive atmospheres in buildings like this call for motors that can take it.

CO-ORDINATED SEWAGE-PLANT ELECTRIFICATION



When a retaining wall was needed on a southeastern highway project the original plans called for a monolithic design. The contractor's bid price on the monolithic structure figured approximately $9.00 per square foot of facial area. By figuring the job with an Armco Bin-Type Wall the competitive and accepted bid was only $4.70 per square foot. The economies of using an Armco Wall permitted a bid almost 50% lower.

Contractor Cuts 50% on Retaining Wall Bid

When construction projects call for a retaining wall experienced contractors know a ready answer. They can bid lower and make a good profit with an Armco Bin-Type Wall.

Savings start immediately. Less material needs to be transported to the job site and the lightweight metal sections are economical to handle and haul.

Armco Walls are so easy to erect that unskilled labor can do it in any season. Little excavation is the rule. Usually you only excavate for the outline of the bins. Earth in the center doesn't have to be disturbed. Backfilling is done as the job progresses and the hazard of undermining adjacent ground during construction is arrested. There are no forms to build, no delay for curing. The work moves fast and labor costs are low.

Keep profit up and bids low by figuring that next job with an Armco Retaining Wall. You'll also find other Armco products economical to handle and install. These include MULTI-PLATE for large drainage structures and corrugated metal pipe for drainage and subdrainage work. Write for data on your specific needs. Armco Drainage & Metal Products, Inc., 4160 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation.

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ARMCO RETAINING WALLS ARMCO

THE CONSTRUCTION WEEK

MOBILIZATION PROSPECT: TOUGHER—Industrial mobilization, says Washington, has become virtually a one-man show—and the script will be hard-hitting because the man running it is W. Stuart Symington, and Symington is a man who believes civilian belts must be tightened to meet military demands. It took him a little over two months to switch from his initial role as peacemaker between would-be mobilizers to quarterback—but there's no doubt now that he's calling the signals. Initially, Symington and his National Security Resources Board were coordinators between the various old-line agencies who were given the real controls. Lately Symington has begun to prod the agencies into action on things he thinks need action. An example is the National Production Authority's ban on non-essential construction—for which Symington is given credit. Another is the push on greater aluminum production.

NOT SO EASY—But NSRB has been finding that operating agencies have just as many headaches as the planners. First instance came after NSRB decided to handle all applications for accelerated amortization of newly-constructed essential facilities: Already NSRB has run out of the unwieldy three-foot-long application forms at least once.

CONTROLS NOT MESHED — The Materials Priority—DO rating—system launched early last month (ENR Oct. 12, p. 25) by National Production Authority, still hasn't reached high gear. That is now apparent, with NPA's production of a glossary of DO rating numbers so far activated by the two agencies authorized to use them (Defense and AEC). According to NPA, Defense so far is using only 15 of 39 DO-numbers assigned to it; AEC is using only six. The reason: Few of the contracts had begun to run into materials shortages of the magnitude expected when defense production gets into full swing.

SLOW BUT SURE—And on the subject of mobilization, Washington is looking for a cutback in the speed and extent of mobilization plans: The decision now is for a slower but steadier build-up of the West's armed might. It results from economists' fears over the letdown they feel must follow the $60 billion-a-year peak rate in defense spending, expected by June, 1952.

COOPERATION—Two New Jersey counties have already availed themselves of a State Highway Department invitation to pool their purchases with the state agency. Hunterdon and Salem counties will buy their road-marking paint jointly with the state. Commented Commissioner R. J. Abbott: Use of recently developed specifications, plus instruction in the use of more modern methods of applying the paint will result in savings to the counties.

QUESTION—A North Carolina state municipal roads commission recommendation that the state take over responsibility for building and maintaining city streets got approval from Henry W. Jordan, chairman of the State Highway Commission, but Jordan had one pertinent question: How will the program be financed? Jordan said that his commission's recommendations for raising additional revenues would go to the 1951 state legislature in January.

LONG PUMP TRIP—The six 20-mgd deep-well-turbine pumps in New York City's emergency pumping plant on the Hudson (see p. 32 this issue) were built in Los Angeles and shipped cross-country. Peerless Pump, through its Eastern representative (Turbine Equipment Co.) got the order, bidding against East Coast manufacturers. Realizing that efficiency wasn't a deciding factor (the plant won't operate continuously) Peerless purposely shaped impellers on the five-stage pumps for increased resistance to flow—to help counteract downward thrust of discharge pressures. This cut down pump efficiency, but greatly reduced first cost by simplifying thrust provisions. It is claimed that these well-traveled water-supply guardians are the largest deep-well turbine pumps ever built.

CANADA CUTS DEEPER?—Following its recent announcement (ENR Nov. 2, p. 17) of "severe restrictions" in governmental spending on civilian construction, the Canadian government is now expected to ask the next session of Parliament for authority to reimpose building controls on all construction. Observers expected this action to follow the recent release in Washington of terms of a new agreement between the U. S. and Canada providing for coordination of defense programs of the two nations. The agreement includes the principle that—if necessary—the two countries will institute coordinated controls over the distribution of scarce materials and supplies. A straw in this direction is the fact that C. D. Howe (now Minister of Trade and Commerce and wartime "czar" of munitions and supply production) spent a week in Washington recently, negotiating — observers think—for an increase in the supply of steel to Canada.

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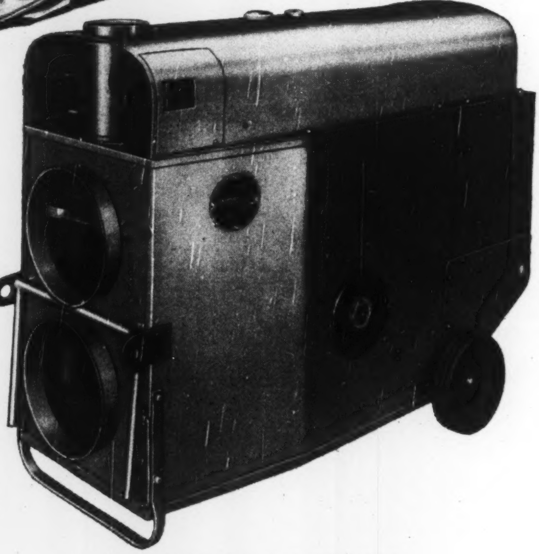

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When a builder finds he gets more production from workmen, gets a unit that is so adaptable he can use it for heating, thawing or drying anywhere, anytime—he's sold and he'll tell you so. Remember, this is heat that pays for itself!

That's why more Herman Nelson Portable Heaters than ever will speed construction jobs through the coldest months this winter.

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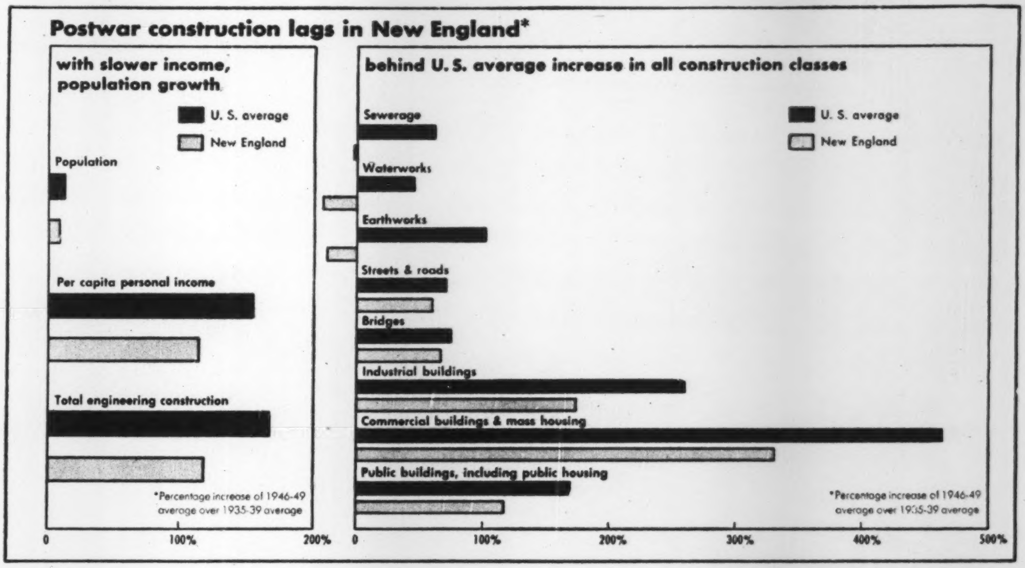
CONSTRUCTION TRENDS


Postwar construction lags in New England*

This report—fifth in a series of seven analyses of regional construction trends is based on a special economic study made by ENGINEERING NEWS-RECORD

New England Construction Outlook

Mobilization will cut construction in New England next year, as shortages and credit restrictions reduce non-essential building. But prosperity in manufacturing will give the region a golden opportunity to rebuild its aging industrial plant.

New England's share of U. S. annual construction has been falling in recent years. It was 5.6% in 1935-39, dropped to 4.6% in 1946-49. New England now ranks last among the six ENR regions in the value of its annual construction.

Actually, the value of annual New England construction has been rising since the war—in 1946-49 it averaged 119% over the 1935-39 average. But New England still fell behind, because the U. S. as a whole raised its annual building much more—an average of 168%.

Increases in New England construction are held down by the region's slow rate of growth, while big wartime population growth boosted postwar building in other parts of the nation.

As a result, New England's postwar increase in commercial building and mass housing lagged behind the U. S. average.

Growing industry stimulates most types of construction—and recent U. S. industrial growth has been concentrated outside New England. Most wartime plants were built in other regions. Even before the war, U. S. industry was moving away from the northeast, searching for new markets, cheaper labor and easier access to raw materials.

Industrial construction reflects this trend. Postwar industrial building was 260% over the 1935-39 average for the entire U. S., but up only 174% in New England. In the first half of 1950, the value of new industrial building contracts was rising in the U. S.—but falling in New England. Rapid industrial expansion outside New England poses an increasing threat to the region's share—still large— of U. S. manufacturing.

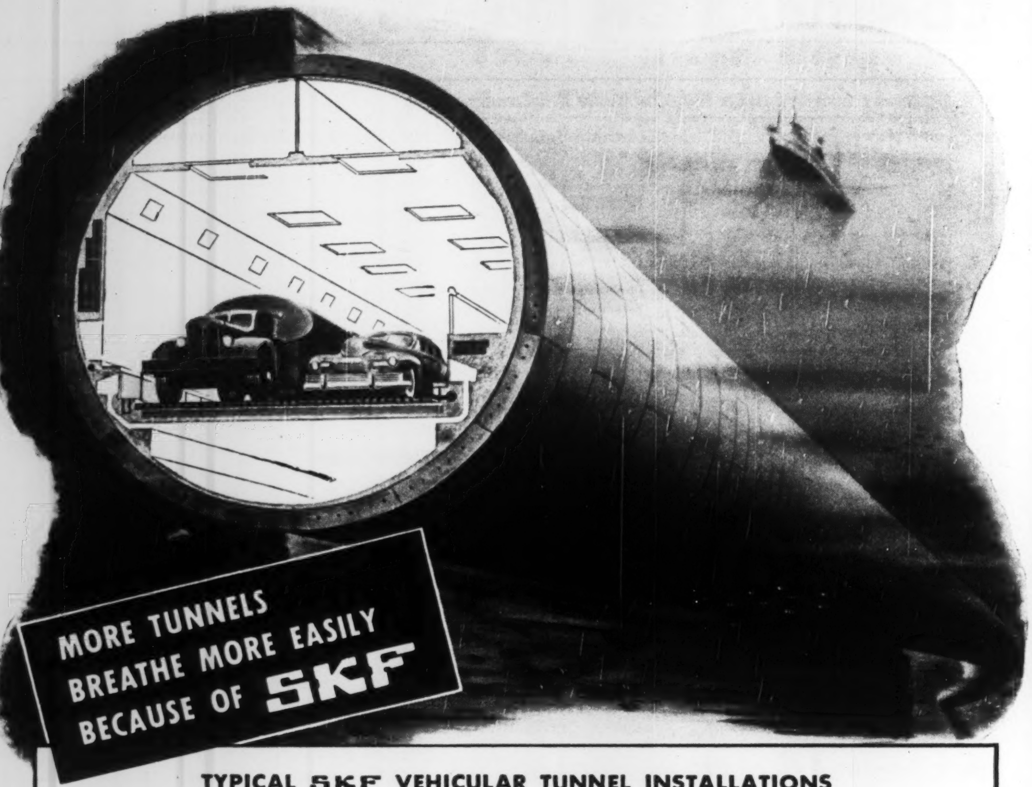
Mobilization offers New England a new chance to rebuild its industrial plant. It brings the region's dream of a big steel mill much closer to realization. And New England industry will benefit from the general business prosperity of the next few years. Busy industry may find it profitable to invest in new buildings.

Postwar New England roadbuilding lagged behind the nation until 1950. Then, mainly because of Massachusett's tremendous highway program, it shot up. 1950 contracts will probably be more than double last year's total.

THE OUTLOOK

Mobilization dominates the short-run prospects for construction in New England. Controls and shortages will curtail most types of non-essential building, but high-priority industrial construction will increase soon.

In the long run, replacement construction—of houses, factories, commercial buildings—will become even more important than it is now.



TYPICAL SKF VEHICULAR TUNNEL INSTALLATIONS

Location	*Number of Fans*	*Fan Manufacturer*
LINCOLN TUNNEL, New York – South Tube	36	Buffalo Forge Company
LINCOLN TUNNEL, New York – North Tube	20	Westinghouse Electric Corp. – Sturtevant Division
QUEENS MIDTOWN TUNNEL, New York	46	Westinghouse Electric Corp. – Sturtevant Division
GEORGE WASHINGTON BRIDGE APPROACH TUNNEL, New York	8	American Blower Corp.
PENNSYLVANIA TURNPIKE – 7 TUNNELS	26	Westinghouse Electric Corp. – Sturtevant Division
BANKHEAD TUNNEL, Mobile, Ala.	3	Clarage Fan Company
BROOKLYN BATTERY TUNNEL, New York	53	Westinghouse Electric Corp. – Sturtevant Division
BROOKLYN BATTERY APPROACH TUNNEL, New York	12	Westinghouse Electric Corp. – Sturtevant Division
WASHBURN TUNNEL, Houston, Texas	5	Westinghouse Electric Corp. – Sturtevant Division

SKF Spherical Roller Bearings have been specified for most of the major tunnel-fan installations because they're self-aligning . . . long-lived . . . require infrequent lubrication and inspection . . . give continuous trouble-free service under highly adverse conditions. *SKF Industries, Inc., Philadelphia 32, Pa., the Pioneers of the Deep Groove Ball Bearing, Spherical Roller Bearing, Self-Aligning Ball Bearing.* 7073

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- ENGINEERING SERVICE
- FIELD SERVICE

EDITORIALS

For More Fundamental Research

ENGINEERS, engineering educators and their research associates—along with their colleagues in other professions—should take note of a significant event: The National Science Foundation, authorized by Congress last May, was launched on Nov. 2 when President Truman appointed the National Science Board. Appointments include seven university presidents, three college deans, four university professors, two research directors, two presidents of public affairs foundations, two industrial-corporation presidents and a consulting engineer.

The act setting up the National Science Foundation required that it be made up of a director and a board consisting of 24 members who "shall be eminent in the fields of the basic sciences, medical science, engineering, agriculture, education or public affairs." That requirement appears to have been satisfied by the President's appointments. As drafted originally, there was no stipulation in the bill that engineering be represented on the board. That it was included in the act as passed is due to effective work by the Engineers Joint Council. The board as now constituted includes three engineers: Dean Andrey A. Potter of Purdue University, Edward L. Moreland of Jackson & Moreland, consulting engineers, and Donald H. McLaughlin, president of Homestake Mining Co. No one of these is a civil engineer, but all are men of broad knowledge of engineering, hence civil engineers need not fear that their interests will be overlooked.

The foundation, which was set up to foster basic research and education in the sciences, fills a vacuum that this nation has too long neglected. It should serve to stimulate, coordinate, and speed up exploration and definition of fundamental knowledge. For applied engineering and resultant production, this nation is unsurpassed. But it is no secret that we have lagged behind in basic research.

To make the National Science Foundation fully effective, Congress will need to authorize its funds well in advance of the year in which they are to be used, as is done with federal highway aid.

Defense and Pollution Abatement

WIDESPREAD POLLUTION in our rivers, tidal water and lakes has been given the polite brush-off too long. Most excuses for delaying construction of remedial treatment works must be recognized for their bare worth: An attempt at evasion of responsibilities. But now comes the difficult-to-combat excuse—a patriotic appeal to defer any work that would interfere with a defense program.

Under such circumstances it is necessary to establish that pollution abatement would offer no interference. Obviously the all-out program that is desirable may have to be shaved, but there are many individual projects that not only would not interfere with a defense program, but are necessary to its success. Pollution abatement is, in truth, conservation of a great natural resource—water. All over the nation the cry is for more and cleaner water. Cities bulging with new citizens need it. Industries bursting their seams to keep up with demands for war and civilian products need it. A ton of steel takes 65,000 gal; a ton of butadiene rubber—320,000 gal.; a ton of viscose rayon—200,000 gal. These are only a few products whose manufacture requires astronomical amounts of water.

What then must be done? Pollution abatement—industrial and municipal—must be considered as an adjunct to defense production, particularly in industrial heartlands. Abatement and production must go hand-in-hand to get the clean water that is so sorely needed. There should be a clear recognition of this fact by those whose responsibility it will be to assure that the defense program is adequate for the nation's needs.

To Stimulate Original Thinking

MUNICIPAL EMPLOYEES aren't often rewarded for their efforts to do a better job. Too frequently when they come up with an idea for cutting costs or solving a sticky problem they encounter apathy instead of encouragement. It is therefore a pleasure to note that something is going to be done to reduce the discouragement that results from this situation.

Through the American Public Works Association, an annual award of $500—to start next year—will be given for the outstanding example of original thinking that leads to betterment in municipal sanitary-engineering practice. Established by C. W. Nichols Sr., chairman of the board, Nichols Engineering and Research Corp. (ENR Oct. 26, p 26), the award itself may be said to stem from some original thinking. In announcing the award, Mr. Nichols said, in effect, "You've got to be practical. You can't get everything out of textbooks. New developments and significant advancements come out of a blending of textbook background and intensive experience." The reasonableness of such advice is only equaled by its rarity.

Establishment of this award will be welcomed by public-works employees. It should give them a new sense of importance and provide a personal incentive for better techniques. The award also has significance for the engineering profession as a whole. It underscores —in a most practical and substantial way—that progress starts with original thinking and proceeds only as the resulting new ideas are recognized and put into practice.

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Republic's Diamond ◇ Design Concrete Reinforcing Bars

...are designed to exceed requirements of the first standard specification covering concrete bar deformations—"Minimum Requirements for the Deformations of Deformed Steel Bars for Concrete Reinforcement"—ASTM Specification A-305-49 adopted June, 1949.

Lugs or deformations are higher and more closely spaced than before—without change in standard foot weights—see table below.

This means better bonding properties, better anchorage in concrete than ever before—possible savings in steel, in bending, in installation.

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Size Number	Cross-Sectional Area, sq. in.	Nominal Diameter, in.	Foot Weight, lbs.
3	0.11	0.375	.376
4	0.20	0.500	.668
5	0.31	0.625	1.043
6	0.44	0.750	1.502
7	0.60	0.875	2.044
8	0.79	1.000	2.670
9	1.00	1.128	3.400
10	1.27	1.270	4.303
11	1.56	1.410	5.313

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CONCRETE REINFORCING BARS

ENGINEERING NEWS-RECORD

NOVEMBER 16, 1950 VOL. 145 NO. 20

NPA extends DO priorities to AEC contractors, others

Extension also applies to NACA and Coast Guard; Veterans Administration, Public Building Service feel pinch; new control group seen in six months

Construction came in for a new wave of priority extensions last week.

The National Production Authority first gave additional rights to the Atomic Energy Commission to assign DO (Defense Order) ratings to plant construction projects of its contractors and subcontractors—where the plant will be operated for atomic-energy purposes. A few days later the agency extended priority privileges to the National Advisory Committee for Aeronautics and the Coast Guard—applicable to direct construction contracts as well as to procurement orders.

• **Hospitals in the picture**—On another front, there already was a tussle under way over construction priorities. The original delegation to the Defense Department (ENR, Oct. 12, p 25) failed to limit priorities to military construction. The Corps of Engineers already has assigned DO ratings to some of the hospitals it is building for the Veterans Administration. In one place an Army Engineer hospital job—complete with DO privileges—is going up alongside another VA hospital that the agency itself is building. Under priority compulsion, suppliers are delivering to the Army Engineers and telling the VA project next door they have nothing left for it.

Now VA wants priorities for all VA-built hospitals. But that is only a straw to show the way the wind is blowing. The Public Buildings Service says its jobs need priorities, too. PBS does have its problems. Right now, for example, it has requests in Washington from other agencies for 1,700,000 sq. ft. of additional office space—and no space available.

• **Could cover waterways**—Under the priority authorization to the Defense Department, the Army Engineers could assign DO ratings also to their flood control and river and harbor projects. So far there has been no pinch on materials that would require extension of priorities to civil works projects. The Corps of Engineers won't request any such extension so long as projects—even for power or other essential purposes—can get along without priority help.

Government officials agree that priorities are effective only so long as they are not spread too widely. As soon as the authority becomes diluted by too broad application, priority ratings lose their potency. The trend is heading in that direction, leading eventually to a controlled materials plan—CMP—like that of War II. Many officials expect such an allocations system within a few months.

NATURAL GAS COMES TO NEW YORK—Workman welds last 60-ft section of Texas-New York natural gas pipeline, at Manhattan's Hudson River shore. The 4,680-ft crossing is the longest in the new system, also the most difficult. The crossing was made by dredging a 25-ft-deep trench for the pipe in river's bottom, which nears 100-ft depth in spots. Pipe was pulled across from Edgewater, New Jersey, with daily pauses for welding-on prepared 440-ft sections. Big problem was holding alignment against heavy tides during pulling. (Wide World photo)

Prior to last week's orders, the Defense Department had been authorized by NPA to extend DO ratings to other government agencies—such as the National Bureau of Standards—that are engaged on projects for defense. These ratings could be assigned by the agencies to construction jobs as well as procurement orders.

Now the NACA and the Coast Guard have been given direct priority authority—on a par with the Defense Department and the Atomic Energy Commission.

◆

AEC gets priority power for plant construction

The Atomic Energy Commission has been given powers to issue DO, (defense order) priorities for the construction of plants that serve the commission but are not owned nor operated by that agency.

This is the first step taken by the National Production Authority to grant priorities for plant construction.

Uncertainty regarding construction is showing up as defense manufacturers are making more and more requests for construction priorities. Some industrialists and construction people think the last week's extension of priority authority to the Defense Department and other agencies of the government such as the National Bureau of Standards for defense projects included priority powers for granting DO ratings to the construction industry.

Defense officials consider it likely that NPA will grant them the right to issue DO orders for essential industrial construction by private owners up to a fixed dollar maximum.

◆

Youngstown takes MVSD assessment off budget

Youngstown, O., City Council has removed a $299,729 assessment for the Mahoning Valley Sanitary District from its preliminary 1951 budget.

The council's action is expected to force a showdown court battle on whether or not the district can levy against Youngstown's taxpayers without the council's approval.

Annual assessments have been made to pay principal and interest on outstanding bonds.

Avalanche buries Peruvian dam work

An avalanche of 150,000 tons of ice and snow, falling into a lake 13,000 ft up in the Peruvian Andes late last month caused a flash flood that destroyed 5 to 10% of the facilities now under construction on Peru's $10,000,000 Santa hydroelectric project (ENR Aug. 7, 1947, p 88).

The destructive wall of water left in its wake a deep layer of silt that blanketed the damsite up to gatehouse floor level—50 ft above the crest of the completed overflow diversion dam.

Those killed in the deluge numbered 19, and destruction included bridges, roads and rail lines. A 1,000-hp temporary power installation set up for construction needs was completely destroyed; a bridge went out, taking the plant's four 10,000-kva transformers and their two exciters with it. Three 25-ton cranes—bought second-hand from TVA—were demolished along with a rock crushing plant and two concrete mixers.

The buried dam apparently withstood the inundation. But, in stopping the tons of water-borne material eroded from the valley farther upstream, it became so hopelessly buried in silt that it has been suggested a new dam be started on top of the silt over the site of the buried structure.

Damage could have been worse—eight times worse, according to estimates. The avalanche was anticipated and a 50-man crew had been busily draining Lake Shaja-Rurish, (source of the flood).

Rio Santa flows into the Pacific at Chimbote, and it is chiefly this seaport that an ultimate 500,000-kw project is planned to serve. Completion of the portion of the work damaged by the flood, 60 miles upstream at Hidroelectra, had been scheduled for completion by late 1952. It is now estimated that completion will be delayed six months.

◆

Alcan lets big contract on Quebec power project

Aluminum Company of Canada has awarded contract to Fraser-Brace Engineering Company of Montreal for construction of a 400,000 hp hydroelectric development at Devil's Falls, Peribonka River, near Lake St. John.

Cost of the project is estimated at $20 to $25 million.

Having developed the outlet of Lake St. John, Saguenay River—Alcan has now moved up into a tributary of that lake to increase its power supply for the works of the Aluminum Company at Arvida serving Canadian and American defense needs.

Workers saved by 5-min. warning of rock slide

Work on the 1-200-ft highway tunnel on a new alignment of U. S. 60 near Superior, Ariz., was set back temporarily by a 1,000-yd rock fall 535 ft from the portal Oct. 14. The tunnel had been driven 645 ft at the time of the fall.

A power shovel, front-end loader, and a dumpster truck were sealed in by the fall. There were no injuries and all equipment was recovered.

Magma Copper Co engineers had advised the Fisher Contracting Co of three fault areas and the fall was not unexpected. Workers had 5 min warning.

Engineers said the first two falls were "right on schedule." The third fault area has not been reached.

The fault areas will be lined. All other sectors of the tunnel are through solid rock.

◆

Falcon dam contracts awarded C. F. Lytle

C. F. Lytle & Co. and associated contractors doing business as the Falcon Dam Constructors, Houston, Texas, are successful bidders for Schedule No. 1 and No. 2 contracts for Falcon Dam and power plant on the Rio Grande.

Commissioners L. M. Lawson of the United States and David Herrera Jordan of Mexico announced contract awards for the International Boundary and Water Commission.

Falcon Dam Constructors, and their Mexican subsidiary, Constructora Intercontinental, Mexico City, represent the following firms: C. F. Lytle & Co., Sioux City, Ia.; Foley Bros., Inc., St. Paul, Minn., Massman Construction Co., Inc., Kansas City, Mo.; Tellepsen Construction Co., Houston, Tex.; Edward Peterson Co., Omaha, Neb.; San Ore Construction Co., McPherson, Kan.; and Anis Construction Co., Oklahoma City, Okla.

The bids, the lowest submitted, were $7,801,064 for Schedule No. 1, and 68,525,983.00 pesos, Mexican currency, for Schedule No. 2.

The earthfill dam will be located 75 mi. downstream from Laredo, Tex., on the Rio Grande and will be built jointly by Mexico and the United States.

Five miles long, the dam will impound four million acre feet of water. The water will be used for irrigation and to generate power for the two countries.

Col. Frech to head agency for northeast resources

Acting on presidential orders (ENR Oct. 26, p. 31), the Federal Inter-Agency River Basin committee has established a New England-New York Inter-Agency Committee to survey water, land and related natural resources of the New England states and New York. Col. Frederick F. Frech has been named Army representative on the committee and committee chairman. Members also will be appointed from the Interior, Agriculture and Commerce Departments, as well as the Federal Security Agency and the Federal Power Commission.

The White House said the New York-New England group would complete a survey by July 1, 1952, and recommend a coordinated program for the development, use and conservation of the resources studied. The first meeting of the committee will be held in Boston in the first weeks of next month.

- **Recalls 1948 study**—One survey that has been made by another group for New England pertains to water power resources. In 1948 the Power Survey Committee of the New England Council, Boston, reported that, outside of Maine, little water power remains to be developed in New England. The survey estimated 1948-1958 power-increase needs to be 1,100,000 kw. A total of 263,000 kw could yet be developed in Maine, and 157,000 kw elsewhere. The remainder of needed power would have to be produced in steam plants. Private industry, the report stated, was ready to meet its power-producing responsibilities. The report also asserted that the most that could be expected from Corps of Engineers dual-purpose projects is 80,000 kw.

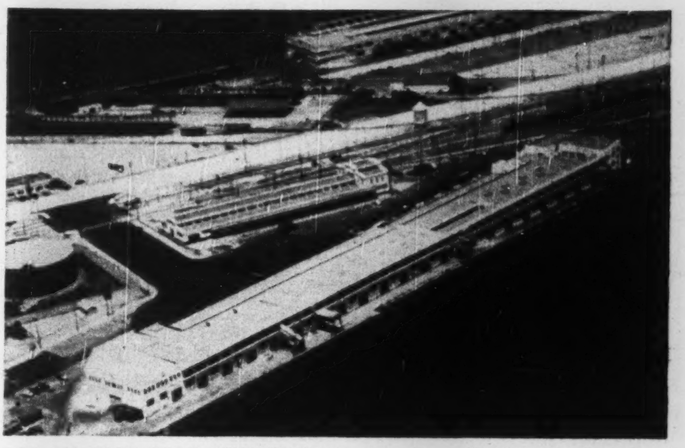
◆

Corps of Engineers resumes high explosives tests

The Corps of Engineers will shortly resume desert high explosives tests in Utah that were discontinued in 1948. A principal purpose of the tests, according to Corps spokesmen, is to determine the behavior of shock waves below the immediate ground surface. Such studies could be utilized to gage the effect of atomic missiles on subsurface bomb shelters.

The first area of the new operations will be in the clay, limestone and sand sectors of Utah's Dugway Proving Grounds. However, firing of heavy blasts, which used as much as 320,000 lb of TNT in previous tests, is not expected until next spring.

The engineers likewise will study blasts in tunnels driven in rock.



LOS ANGELES PORT TERMINAL—Air view shows $3,000,000 passenger-cargo marine terminal recently completed in Los Angeles harbor. It provides 30-ft apron wharves for easy loading of cargo and 90-ft roadways for vehicle access. Terminal was constructed by Los Angeles Harbor Department, under supervision of E. C. Earle, chief harbor engineer.

Construction to drop 17% in 1951, advisors state

New construction put in place next year will be down about 17½% below 1950, in the opinion of two industry advisory committees that conferred recently with the National Production Authority.

Figures are tentative in the sense that they have not yet been approved by the 30 to 40 industry men who attended the NPA meetings. Both committees—while in Washington—gave their judgment on next year's volume to the Construction Division of the Commerce Department. The 17½% figure was arrived at by comparing the group's estimate of $22,580 million with the Department of Commerce's revised 1950 estimate of $27,370 million for all new construction, alterations and additions in continental United States.

A breakdown of figures showed significant minus trends in the following categories: All private construction, −26.7%; private residential, −46%; private recreational, −68.8%; public recreational, −55.2%.

Significant plus trends: Private industrial, +17.4%; warehouses, offices and loft buildings, +25%; farm construction, +14.7%; public utilities, +6.8%; all public construction, +9.9%; public residential building, +11.8%; military and naval facilities, +233.3%; roads, +6.4%.

Roads volume was estimated at $2.5 billion for 1951.

◆

Construction priority men selected by U. S. agencies

Oscar L. Chapman, Secretary of Interior, has appointed Ferdinand J. C. Dresser to his defense controls staff to assist him on construction priorities and allocations for all four of Interior's controls divisions: power, petroleum, solid fuels, metals, and minerals.

Dresser at one time headed the construction division of WPB during World War II.

- **Five-year write off**—Appointment last week of Frank R. Creedon to organize a facilities clearance staff in NPA provides the authority with a staff to handle processing of certificates of necessity for five-year amortization and to discharge NPA responsibilities on direct government loans for effecting future commercial plant expansion.

John L. Haynes, who heads up the new building materials division of NPA will have charge of all materials except lumber and steel. Lumber remains under the forest products division headed by Harold E. Holman, and steel is the responsibility of Frank T. McCue who heads up the iron and steel division.

- **Certificates of necessity**—Applications for certificates of necessity are obtained from the National Security Resources Board, or from field offices of the Department of Commerce in most major centers. When returned, NSRB will refer the application to NPA or the appropriate defense agency in Interior and Agriculture. On the basis of advice from these sources NSRB will issue certificates or reject applications. Bulk of the applications will go to NPA.

◆

Concreting records made in Columbia Basin work

Concrete lining of the West Canal of the Bureau of Reclamation's Columbia Basin Project in Eastern Washington has been completed in record time by the Morrison-Knudsen Co. This leaves only the second section of the East Low canal to be lined next fall by J. A. Terteling & Sons.

First sections of the canals are concrete-lined because they traverse rocky ground in which excavation of larger earth canals would be more expensive. When the irrigated areas are reached, lining is no longer desirable, since a great quantity of surplus water on farmers' lands is expected to find its way back into the earth canals by seepage.

Morrison-Knudsen completed 99 per cent of its $6,136,234 contract for the 14-mi. section in 62 per cent of the time allowed.

N. Y. bus terminal completed, other projects ready

As the construction season nears its end in Northern states, a number of projects are in completion or other significant stages. Among these projects are the following:

Port of New York Authority Bus Terminal—The Port Authority has announced that construction of the main building and public areas of its Manhattan bus terminal were completed Nov. 1, by Turner Construction Co., on schedule. (ENR Jan. 12, p. 26).

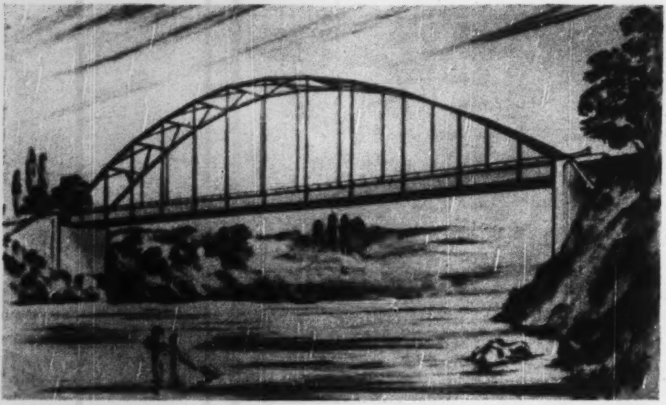
Boston Airport Terminal—The terminal building at Boston airport, described in Engineering News-Record April 20, p. 42, was dedicated Oct. 22 in the presence of 30,000 visitors.

Chicago Parkways—Five miles of the Calumet parkway and the Tri-State expressway in the southern part of Chicago were opened Nov. 1.

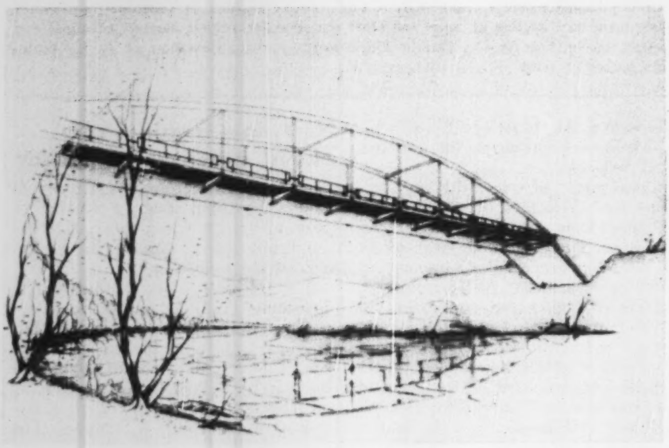
Enders dam closing—Enders dam, in Nebraska, a U. S. Bureau of Reclamation project, entered its final stage recently when workmen began pouring a 7x7x10-ft plug that will seal the dam.

MOLES AWARDS

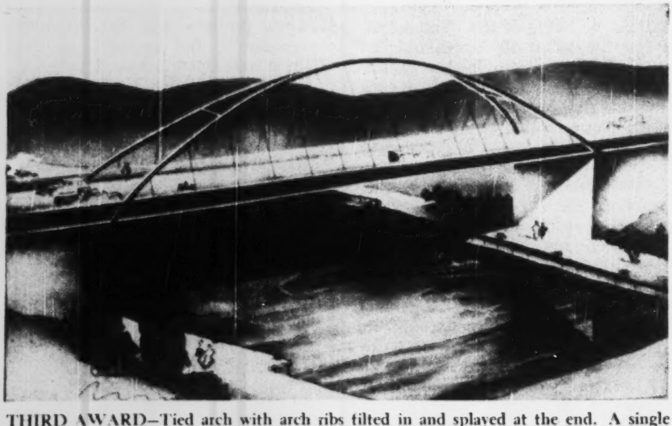
The Moles, New York association of tunnel and heavy-construction men, has selected Lester S. Corey, president of the Utah Construction Co., San Francisco, and Ray N. Spooner, treasurer of Allen N. Spooner and Sons, New York, to receive, on Jan. 31, the organization's annual awards for service to the construction industry.



FIRST AWARD—A tied arch with a rise of 45 ft, 13 panels and a stiffening tie girder. Arch ribs are 14 in. WF sections, hangers and sway bracing 8 in. pipe.



SECOND AWARD—Two-hinged arch with a slender rib and a single stiffening girder of semi-cylindrical shape located at the center of the roadway.



THIRD AWARD—Tied arch with arch ribs tilted in and splayed at the end. A single member is thus used over the center 40 ft of the arch.

Welded bridge designs receive large cash award

The James F. Lincoln Arc Welding Foundation has announced awards of $10,750 to thirteen engineers and bridge designers in its 1950 Welded Bridges of the Future Program for the design of an all-welded two-lane 250-ft. span through-highway bridge. The program attracted designers from sixteen different countries.

The first award of $5,000 was given to James H. Jennison, of Pasadena, Calif., head of the development engineering division at the U.S. Naval Ordnance Test Station. Second award of $2,500 went to Ernst Amstutz of Zurich, Switzerland. The third award, $1,250, was given to Prof. Thomas C. Kavanagh, Pennsylvania State College, who had received the first award in the 1949 competition.

The ten honorable mention awards was each worth $200.

- **Better bridges**—The program is sponsored by the Lincoln Foundation to promote the building of better bridges for less money and with less steel. The rules were formulated to stimulate designers' ingenuity and originality in developing new design ideas, new shapes for structural steel members and new fabricating and erecting methods.

According to E. E. Dreese, chairman of the board of trustees of the Foundation, "The welded bridges designed for this program could be built today with 20% to 30% less steel than would be required for equivalent riveted bridges."

Mr. Dreese pointed out that the precedent of European welded bridges was a major influence in the designs submitted both by Americans and by the Europeans themselves. Prof. Kavanagh, third award winner, in acknowledging the influence of European welded bridges on his design, said, "The importance of the tremendous backlog of successful experience in welded bridge construction in Europe cannot be emphasized too strongly to American engineers, whose technical literature simply has not succeeded in getting across to its readers this truly remarkable story of achievement in welding."

Designs for the program were judged by a jury composed of the following: Raymond Archibald, U.S. Bureau of Public Roads; Harry C. Boardman, Chicago Bridge and Iron Co.; John I. Parcel, consulting engineer, St. Louis, Prof. Frank W. Stubbs, Jr., Purdue University; Prof. Wilbur M. Wilson, University of Illinois; Prof. E. E. Dreese, Ohio State University; and Prof. James G. Clark, Department of Engineering, University of Illinois.

CONSTRUCTION BUSINESS

Insurance syndicate offers N. J. a school lease plan

Eight insurance companies wishing to invest between $500 million and $600 million in public property in New Jersey have offered to build schools under a leasing arrangement with four different school boards.

No approval of the insurance syndicate offer has been made, and no application has been made to the state Department of Education for its approval of any such arrangement.

The plan was first made public at a meeting of the Camden County chapter of the educational planning commission of the New Jersey Education Association.

John Bossart, state commissioner of education asserted that the plan as outlined to him did not sound feasible and would require considerable legislation before it could become effective.

Charles D. Anderson, deputy commissioner of education, says the plan is not sound.

Chief objection is the interest rate the syndicate charges, which is higher than the 1.625% low bid obtained on the $700,000 bond issue for Hunterdon County's recently approved new high school.

Other school bonds in New Jersey were sold during October for rates under 2%, Hillside 1.744%, Lincoln Park 1.88%, Piscatawy Township 1.98%. Teaneck Township sold street and paving bonds at 1.24%, Midland Park general improvement bonds at 1.30%, and New Jersey's state institution bond issue of $25,000,000 went for 1.185%.

◆

Highway costs turn up

- **The Bureau of Public Roads** composite mile cost index for the third quarter of 1950 shows a rise of 6.2 points to 146.2. This is 4.4% above the second quarter of this year which was the low point of the index in its dip following 1948's fourth quarter high of 165.3. Even so, the third quarter is 2% and 3 points lower than last year, same time. This index is based on 1925-39 = 100 and reflects low bids on highway contracts.

A 6.6% rise in the common excavation index from its 91.2-point low of second quarter 1950 to a third quarter at 96.9 contributed most heavily to the overall rise. Also a factor was a structures sub-index rise of 8.4 points or 4.4% to 199.4.

Common excavation, though up the highest percentage from this year's low is still 11% less than third quarter 1949's 108.6. In contrast, the structural sub-index is only 3.1% below third quarter 1949.

Concrete pavement cost index is up 3.7% and 5.9 points to 165.9 from second quarter 1950, low for the years since 1948. At this figure it is 3.4% or 5.5 points above 3rd quarter '49.

- **Virginia** plans some reductions in its highway projects this year since the results of a mail survey show costs running beyond allocations, the Department of Highways says.

Wherever possible road mileage will be cut and cost trimmed. Bridge construction is expected to continue with only minor economies—costs beyond allocations to be made up in next year's budget.

Estimates of road cost increases run from 10 to 15%.

Soaring equipment costs and wage hikes, plus labor and cement shortages are all credited with the rise. Bright spot in the picture: materials prices stay steady.

Skyrocketing prices of heavy equipment since Korea have raised contractors' estimates, especially where rental is involved. Market uncertainties find most bidders making added contingency allowance in their bids.

◆

ENR Cost Indexes lower

Lumber's Jack-and-Jill price performance that took the ENGINEERING NEWS-RECORD Construction Cost Index up to 534 in October has brought it back down to 528 for November. This is a little below the September, 1950 value of 530, all based on 1913 as 100.

Similarly the November ENR Building Cost Index is down to 389 from 396 in October, 393 in Sept.

This November, 1950, construction cost index is 10% higher than in December, 1949, 12% higher than its May low in the 1949 dip. It is 10% above the 1948 high that preceded the temporary dip last year. The Building Cost Index follows a similar pattern but is 11% above December, 1949, and 12½% above the low of its 1949 dip.

These two indexes measure movement of basic cost to the contractor of labor and material but do not correct for contractor productivity.

◆

Equipment cost index up

Marshall & Stevens equipment cost index for September, 171.5, is up almost eight points or less than 5% since June's 163.1. The index is based on 1926 as 100. This is a new high for this index. The M & S building cost index based on 1913 as 100 is at 413, an all time high 44 points and 12% above June's 369, and 52 points and 14% above 1949's December low of 361. The previous high was 1948's 381 exceeded by September of this year by 32 points or 8%.

◆

37% paid nothing down

No down payments were made on nearly 40% of the new one-family homes bought with mortgage money in 1949, the BLS reports.

In a survey of nine cities, including Boston, Atlanta, Detroit, Los Angeles, Miami and Philadelphia, the BLS found that almost 63% of new single family units in 1949 were bought with down payments of 10% or less.

Put another way, that means that only 37% of the homes bought last year had down payments on them of more than 10%, the minimum requirement of regulation X.

Veterans, the survey showed, bought less expensive homes than non-veterans, and more than half of them paid nothing down as against more than half of the non-veterans who paid more than 15% down.

Excluded from this preliminary study of BLS are custom built houses. The nine areas studied include about one-fifth of all non-farm one-family units started last year. Nearly 60% of the homes were in the $7,000 to $10,000 price range.

◆

October pavement awards

Awards of portland cement concrete pavement during the first ten months of 1950 total 51.7 million sq yds, up 11.8 million sq yds and 30% from 1949's equivalent figure, the Portland Cement Association reports.

Of the ten-month total for this year 24.9 million sq yds went into roads, 23.9 million sq yds into streets and alleys, and 2.8 million, airports.

October's total is 3.6 million sq yds, up 33% and one million sq yds from October of last year. Of this 1.6 million went into roads, 1.9 million sq yds into streets and alleys and 49,900 sq yds into airports.

◆

Airport improvement for '51

The Federal Aid Airport program's 186 airport projects for 1951 will involve a total expenditure of $51 million, with $24.8 million from federal funds and $26 million from local or state sponsors.

Around $10.5 million of the total will be for building construction, and $33.2 million for paved areas.

BIDS AND BIDDERS

(Major project news received after Construction Reports, page 82, went to press.)

Chief Joseph Dam—$25,967,921 was the low bid offer of L. E. Dixon, San Gabriel, Calif., The Arundel Corp., Baltimore, Md., Hunkin-Conkey Construction Co., Cleveland, O., and the American Pipe & Construction Co., Southgate, Calif., when the U. S. Engineers, Seattle, Wash., opened bids Nov. 9, on the second stage construction of the Chief Joseph Dam, across the Columbia River, near Bridgeport, Wash. The engineer's estimate was $23,870,907.

Steel Mill—Austin Company, Cleveland, O., will design $200,000,000 steel mill at Morrisville, Pa., for the Carnegie-Illinois Steel Co., Pittsburgh.

Pulp Mill—Maritime Pulp & Paper Corp., Fredericton, N. B., plans to build a newsprint pulp mill at Saint John's, New Brunswick, to cost $45,000,000. Stadler & Associates, Montreal, Que. are engineers.

Apartments—Fisher Brothers, Kew Gardens, N. Y. will construct by own forces six apartments in Mount Vernon, N. Y. to cost about $7,000,000. Lawrence M. Rothman, New York, N. Y. is architect.

Textile Plant—United Merchants & Manufacturers, Inc., New York, N. Y. plans $15,000,000 textile plant at Union, S. C.

Housing—Jersey City Redevelopment Agency, Jersey City, N. J., has announced two slum clearance housing projects in Jersey City. Cost will be about $32,400,000 and agency will clear sites for private builders.

Sewage Disposal and Sewers—Ryan Construction Co., Evansville, Ind. was low at $4,800,000 for sewage disposal works and sewers for city of Evansville, when bids were opened Nov. 6. Consoer, Townsend & Associates, Chicago, are consulting engineers.

Office—J. W. Bateson Co., Inc., Dallas, Tex. has been awarded contract for the construction of 17-story office building in Dallas, by Leo F. Corrigan, Dallas. Estimated cost is $3,000,000. Wyatt C. Hedrick, Dallas, is engineer-architect.

Housing—Caruso Contracting Co., Toronto, Ont. plans building houses in East Woodlands area, Pickering Twp., near Oshawa, Ont. at about $8,000,000.

Storage Warehouses—Morrison-Knudsen Co., Inc. and Peter Kiewit Sons Co., Seattle, were low bidders at $3,582,782 for two permanent storage warehouses at Fort Richardson, Alaska. U. S. Engineers, Anchorage opened bids Nov. 7.

Housing—City of Boston Housing Authority, Boston, will open bids Dec. 1, for $4,000,000 housing project in East Boston. M. A. Dyer, Boston is architect and Hayden, Harding & Buchanan, Boston, are engineers.

Navy Housing—Potomac River Command, Washington, D. C. has selected Franklin A. Trice, Richmond, Va. as sponsor to construct; finance and manage $3,500,000 housing project for Naval Personnel at Marine School, Quantico, Va. Sponsor is now taking bids for construction. The Navy will also select a sponsor about Jan. 1, for housing at Naval Air Station, Whitbey Island, Wash., to cost $3,000,000. Stuart & Durham, Seattle are architects.

Housing—John A. Johnson & Son, Oak Ridge, Tenn. have been awarded contract for Lonsdale Housing Project, at Knoxville, Tenn. at $2,697,000 by the Knoxville Housing Authority. Bealor & Wilhoit, Knoxville, are architects.

Children's Hospital—Driscoll Foundation Children's Charity Hospital, Corpus Christi, received low bid on Nov. 9, from Linbeck Construction Co., Houston, at $2,877,402 for Children's Hospital, in Corpus Christi. C. H. Page & Sons, Austin, are architects. Eggers & Higgins, New York are consulting architects.

Power House—Board of Supervisors Rensselaer County, Troy, N. Y. will open bids Nov. 21, for power house, administration building and sewage disposal system at County Home for Old, at Troy, N. Y. Estimated cost is $2,700,000. R. T. Westbrook, Troy, is architect.

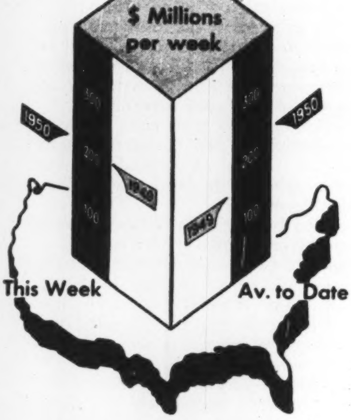
Terminal Elevator—Nueces County Navigation District 1, Corpus Christi, Tex. announces plans will be available Jan. 15, for proposed two million bushel terminal elevator at Port of Corpus Christi. Cost is about $2,500,000. Horner & Wyatt, Kansas City, Mo. are consulting engineers and Duane Orr is engineer for district.

State Building—State Division of Architecture, Sacramento, Calif., will open bids Dec. 19, for superstructure of Department of Education and Finance Building at Sacramento. Cost will be about $2,630,000. Anson Boyd, Sacramento is state architect.

COSTS AND VOLUME

ENR INDEX NUMBERS

Index Base = 100	1913	1926	1949
Constr. Cost. Nov. '50	527.85	253.74	110.67
Bldg. Cost . . Nov. '50	388.85	210.20	110.56
Volume . . . . . Oct. '50	471	191	136



Activity This Week

As reported to ENR
(in millions of dollars)

Amount of contracts let

	Week of Nov. 16, '50	Cumulative 46 wks 1950	Cumulative 46 wks 1949	% chge
Federal	$23.3	$1,068.3	$919.5	+16
State & Mun.	73.0	3,312.0	2,847.2	+16
Total Public	96.3	$4,380.3	$3,766.7	+16
Total Private	118.6	6,051.2	3,436.9	+76
U. S. Total. .	$214.9	$10,431.5	$7,203.6	+45

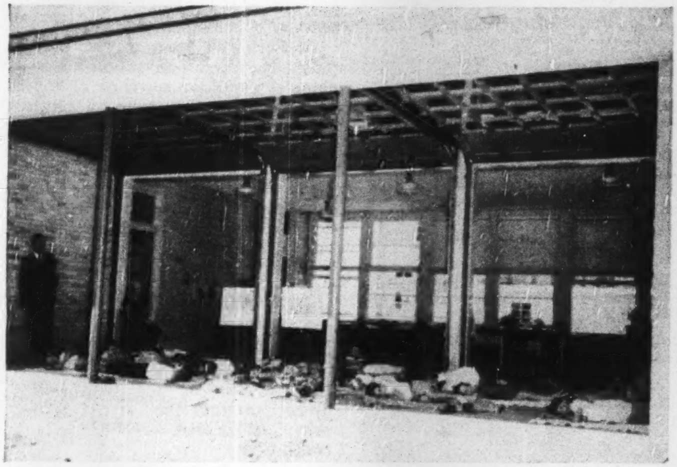
Contracts by type of work

	This Week	Cumulative 46 wks 1950	Cumulative 46 wks 1949	% chge
Waterworks.	$1.6	$196.4	$188.0	+4
Sewerage . .	4.9	254.7	253.6	+0.4
Bridges	4.9	332.7	327.0	+2
Highways . .	26.2	1,119.5	827.2	+35
Earthwork, Waterways	20.1	368.8	467.7	+79
Buildings:				
Public . . .	25.4	1,488.3	1,075.7	+38
Housg., pub.	6.3	282.3	253.9	+80
Housg., priv.	71.8	2,899.9	1,579.3	+84
Commercial	16.9	871.1	523.6	+66
Industrial .	21.9	1,430.5	877.8	+63
Unclassified .	15.0	1,187.3	729.7	+63

NOTE: Minimum size projects included are: Waterworks and waterway projects, $28,000; other public works, $50,000; industrial buildings, $68,000; other buildings, $250,000.

New capital for construction

	Cumulative 46 wks 1950	Cumulative 46 wks 1949	% chge
NON-FEDERAL . . .	$522.0	$432.5	+21
Corporate Securities	2,058.3	2,038.4	+1
State and Municipal:			
Excl. housing. . . .	1,978.4	1,930.7	+2
Housing	600.5	740.6	−19
FEDERAL	2,829.1	1,711.7	+65
Total Capital	$7,988.3	$6,853.9	+17



KINDERGARTEN VENTILATION—Overhead garage doors form the wall of this kindergarten in Beaumont, Tex. Here, children enjoy their rest period in open air although they're really indoors. The roof projects 15 ft beyond the closed-door line, providing still more covered area. The architects, Stone & Pitts, and the contractor, H. B. Neild, believe the doors rarely will have to be closed, thanks to the Texas weather.

Name board for science foundation

The National Science Foundation (ENR May 18, p. 28) finally has taken shape, with the appointment of a 24-member National Science Board last week by the president. Next move will be a meeting of the board, probably in December, to nominate a director, final choice resting with President Truman.

The foundation, shriveled to a mere skeleton of its original conception, will be ready then to operate on a budget of $225,000 for its first year, less than half the amount that the President specified in his budget message. Planned for fundamental research alone, NSF is likely to tie in with mobilization planning in taking over and completing the roster of scientific, technical and engineering personnel.

The 24 board members named represent 16 states and the District of Columbia, ranging geographically from Massachusetts to California, and professionally from neurophysiology to the presidency of one of the largest industrial organizations. Membership includes seven university presidents, three college deans, three college department heads, four university professors, two research directors, two presidents of public affairs foundations, two industrial corporation presidents, two electrical, one mechanical and one chemical engineer.

The appointees are:

Sophie D. Aberle,—special research director, University of New Mexico, Albuquerque, N. M.; Percy Barnes, head, department of chemistry, Howard University, Washington, D. C.; Chester I. Barnard, president, Rockefeller Foundation, New York; Detlev Wulf Bronk, president, Johns Hopkins University, Baltimore; Gerti Theresa Cori, professor or biological chemistry, Washington University Medical School, St. Louis.

James Bryant Conant, president, Harvard University, Cambridge; John W. Davis,—president, West Virginia State College, Institute, W. Va.; Charles Dollard, president, Carnegie Corporation, New York; Lee A. Dubridge, president, California Institute of Technology, Pasadena; Edwin B. Fred, president, University of Wisconsin, Madison; Paul M. Gross, dean of Duke University Graduate School, Durham, N. C.; George D. Humphrey, president, University of Wyoming, Laramie.

O. W. Hyman, dean of medical school and vice president, University of Tennessee, Knoxville; Robert F. Loeb, Bard professor of medical services, College of Physicians and Surgeon, Columbia University, New York; Donald H. McLaughlin, president of Homestake Mining Co., San Francisco; Frederick A. Middlebush, president of University of Missouri, Columbia; Edward L. Moreland, partner, Jackson & Moreland, engineers, Boston; Joseph C. Morris, head of physics department and vice-president of Tulane University, New Orleans; Harold Marston Morse, professor of mathematics, Princeton University.

Andrey A. Potter, dean of engineering, Purdue University, Lafayette, Ind.; James A. Reyniers, director, bacteriology laboratories, Notre Dame University, Elvin C. Stakman, chief, division of plant pathology & botany, University of Minnesota, Minneapolis; Charles Edward Wilson, president, General Electric Co., Schenectady, New York; Patrick Henry Yancey, professor of biology, Spring Hill College, Spring Hill, Ala.

Soil mechanics experts join world group

The United States National Council on Soil Mechanics and Foundation Engineering has been formed as an affiliate of the International Society of Soil Mechanics and Foundation Engineering, made up of similar councils from other countries. A. E. Cummings, director of research, Raymond Concrete Pile Co., is chairman of the American group, and Prof. Philip C. Rutledge of Northwestern University, vice chairman. The mailing address of the council is Room 1308, 140 Cedar St., New York 6, N. Y.

The U. S. Council will operate under the sponsorship of the Soil Mechanics and Foundations Division of the American Society of Civil Engineers. Its aim is "to promote cooperation among scientists and engineers and to encourage the interchange of knowledge, ideas, and the results of research." It will cooperate in the holding of international congresses and compile annual reports covering U. S. soil mechanics work.

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Carolinas AGC branch takes over ARBA group

Contractor members of the Carolinas Chapter, American Road Builders Association, have dissolved their regional organization, turned their charter over to the Carolinas Branch, Associated General Contractors of America, and are joining that association on an individual basis, not as a group. Many members formerly belonged to both organizations.

Details of the change were discussed at the 30th annual convention of Carolinas Branch, AGC, held recently at White Sulphur Springs, W. Va. The AGC group now becomes a sustaining member of ARBA. Robert Patten, managing director of the AGC chapter continues in that capacity with headquarters at Charlotte, N. C., and branch offices in several cities throughout the two Carolinas.

SINGLE MACHINE mixes chemicals and tar with subgrade in Navy demonstration at Fort Belvoir, Va. Purpose: to get a tough traffic surface for unstable soils.

Army, Navy show off their quick-roads

Army and Navy civil engineers demonstrated their latest developments in chemical soil solidification at Fort Belvoir recently. Upon invitation of the Engineer Research and Development Laboratories, the Navy brought in a road mixing machine and showed the Army men how to process soil at 12 ft a minute. In return, the Army displayed some tough panels of its rubbery soil mix that refuses to disintegrate under 50,000-lb loads.

Navy engineers really tackled quite a string of "firsts" in putting on their show. They had used the processing machine, a modified Wood Road-mixer, at Port Hueneme, Calif., in beach sand—the material their process is designed to solidify. But at Fort Belvoir—for the first time—they (1) attempted single-pass mixing of both loose sand-silt and tight sand-clay, (2) used low-melting-point pitch as a filler in the mix, and (3) tried out a new catalyst. The Navy took all these hurdles in its stride—but the beach sand process did not show up too well as a solidifier of silt-sand-loam.

• Great loads on thin films—Army exhibits were of a different sort. The engineers put 15,000-lb and 50,000-lb wheel loads over a series of five rubbery soil panels—only 1½ to 3 in. thick—containing between 1 and 2 lb per sq ft of calcium acrylate plus minor amounts of two catalytic chemicals, ammonium persulfate and sodium thiosulfate.

The thin panels took the loads without failure. They should have. The rubbery soil mats had been down for 3 to 8 weeks, and similar loads had passed over them before.

Chief achievement reported by the Army engineers lies in bringing the price of calcium acrylate down out of the stratosphere within field-glass range. The engineers are even getting bids now from three to four chemical companies on small laboratory orders of a ton or two. The cost still is high, but commercial production would bring prices away down.

The Army mix is designed to be compatible with water, the chemicals can be mixed with soupy soil, and the time of set can be varied by adjusting the quantities of catalyst. Sections on display at Belvoir—all but one of them made up of an undesirable Virginia silty-sandy clay—have stabilized sufficiently in 20 min. to 2 hr. to carry a jeep over a soft subgrade. They retain their strength under water.

Army's field laboratory product has been turned out by a baby concrete mixer. The engineers now are conducting experiments in search of a traveling mixing machine to do the job on a grown-up scale for combat-zone roads and airfields.

• Navy has machine—When it comes to field processing of chemical soil mixture, the Navy has gone through much mechanical development. As reported last spring (ENR Mar. 2, p. 26), the Navy at that time had successfully used two different machines to mix sands. Since then, it has adapted its mixer to perform the full series of operations in one pass.

At Belvoir, a heavy crawler tractor pulled the single-pass processing machine at a uniform speed of 12 ft per minute. The mixer rolls on crawler tracks, substituted for rubber tires to travel in sand. A power takeoff from the tractor drove the pugmill mixer. To fit the machine for landing operations, the Navy replaced electric drive for vibratory tampers at the rear of the unit with hydraulic power from a pump operated by a gasoline engine that also turns a screw spreader ahead of the strikeoff.

A two-compartment tank for the liquid chemicals is mounted on top of the machine. The Navy uses furfural resin in its mix, with aniline hydrochloride as the catalyst at Belvoir. Coal tar pitch was added to both tanks.

Navy engineers began using pitch at Port Hueneme last July as a resinous filler for the mix, to take the place of more expensive pentachlorol phenol. High-melting-point pitch was added as a powder to the tanks in all the California work, but at Belvoir the low-melting-point pitch had to be heated and introduced as a liquid. Liquids make up 4 to 6% of the Navy mix, and the pitch supplies about two-thirds of the liquid.

• Fails under big load—Solidification time is regulated by the type of catalyst. Sand mixes harden sufficiently to carry a jeep in a couple of hours and a 40,000-50,000-lb wheel load in 24. For the Belvoir demonstration, the Navy first mixed a 6-in. layer of bank-run sand containing about 40% of silt and loam. After 18 hr the processed road supported an 11½-ton truck. But when a large 2-wheel tractor tried to pull a big airport pavement tester with a 25-ton wheel load onto the same road, the tractor's big rubber tires dug into the material and worked down to the subgrade in an effort to get traction.

Finally the unit backed off the road. The failure occurred under the tractor wheels and not under the 25-ton load, which did not get very far on to the processed material. Some observers thought the subgrade had failed under the tractor wheels. The subgrade had been tested for a CBR of 10-15 a couple of weeks earlier, but wet weather perhaps weakened it.

Later, the Navy machine showed its capacity by cutting and mixing the native sandy clay on the site. By that time, it was apparent that the tamping vibrators, which compact sand mixes satisfactorily, were not adequate for soils containing silt, loam and clay. A 5-ton roller accordingly was put on the processed material.

California water needs discussed at state AWWA conference

If only half of the mean annual runoff in California streams were conserved, it would be possible to irrigate nearly three times the state's present irrigated area and supply the needs of an urban population of some 30,000,000.

This statement by C. B Meyer, supervising hydraulic engineer, California Division of Water Resources, was made as part of a panel discussion of California water supply requirements and availability before the 31st annual conference of the California Section of the American Water Works Assn. in San Diego Oct. 24 to 27.

Mr. Meyer quoted preliminary figures from a detailed water survey made by the Division of Water Resources to be released soon. He said that of the state's total mean annual natural runoff of 70,000,000 acre-ft, 40% occurred in the north coastal area. Only 1.7% occurs in the south coastal area including that of Los Angeles and San Diego. Mr. Meyer said, "It is indicated that additional importations (to the south coastal area) in addition to California's rights in and to the waters of the Colorado River will be necessary to meet the demands of growing population, industry and agriculture." He added that the California Water Plan now being prepared by state engineers will contain provision for this.

Harry F. Blaney, senior irrigation engineer, U. S. Department of Agriculture, said that California now irrigates 6,000,000 acres or about one-quarter of the national irrigated total. Estimate of the ultimate irrigation total in California is 10,000,000 acres. Of this, 2,000,000 acres might be irrigated in southern California ultimately. This would require about 5,000,000 acre-ft of water per year.

Mr. Blaney in speaking on the use of water by irrigated crops and C. C. Elder, hydrographic engineer, The Metropolitan Water District of Southern California, in speaking on domestic and industrial requirements, seemed in agreement that from 2.5 to 3 acre-ft per acre per year was necessary for either purpose. Mr. Elder pointed out that "there is and can be no sharp, definite limitation on the ultimate population that can be sustained here (in southern California) with our present water supplies and water rights." He indicated that traffic and transportation problems will create the real population limitations. However, he urged the necessity of study of reclamation and reuse of wastes from both domestic and industrial sources. He said the Fontana plant of the Kaiser Steel Corp. is a good example of water reuse. By using a complete water reclamation process only 1,100 gal is required per ton of finished product as compared with the national average of 65,000 gal per ton.

- **Pollution control progress**—In another paper, Vinton W. Bacon, executive officer, California State Water Pollution Control Board, reviewed progress of administration of California's new water pollution control law. This law set up nine regional water pollution control boards and one state board to administer a control system aimed at making best use of the state's waters. For the first 6 months of operation, 59 different requirements have been prescribed for control of proposed waste discharges and 28 different requirements have been prescribed regarding control of pollution or nuisances.
- **Awards and officers**—The more than 1,200 registrants at the meeting learned that the section's nomination for the Fuller Award is Prof. W. F. Langlier of the University of California. The section also makes an award in honor of George A. Elliot, its first president, for service to the section. This went to Roy E. Dodson, Jr., sanitary engineer, San Diego Water Department.

New officers are: chairman, G. E. Arnold, director, San Diego Water Department; vice-chairman, Joseph D. DeCosta, East Bay Municipal Utility District, Oakland; and secretary-treasurer, W. W. Aultman, Metropolitan Water District of Southern California, LaVerne. New executive committee members are: Messrs. York Peterson, Santa Maria; M. J. Shelton, La Mesa; and Carl Lau, San Jose.

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Canadian AWWA section creates Maritime branch

At the third annual convention of the Maritime Water Works Association, held Oct. 30 and 31, at St. John, N. B., decision was made to replace it with a maritime branch of the Canadian section of the American Water Works Association.

The MWWA was an independent organization and revision of the bylaws was essential to conform to those of the AWWA. Supervising was A. E. Berry, Toronto, Ont., secretary of the Canadian section of the AWWA, who attended the meet.

CIVIL DEFENSE

Health Department may move—The Massachusetts Department of Public Health has prepared a bill for the 1951 Legislature to allow it to move its facilities outside of Boston, in consideration that the city would be a prime target area in case of enemy attack. The board points out that it has been assigned sponsorship of the medical and health divisions of civil defense and that it needs headquarters which will be able to operate in the event of such catastrophe.

Engineering aid—Mayor James A. Rhodes of Columbus, Ohio, has designated the Franklin County chapter of the Ohio Society of Professional Engineers as the group to furnish engineering aid for civil defense in that area.

To list skilled workers—Building inspectors and commissioners of Massachusetts were told by Civilian Defense Commissioner John W. Stokes that they are key men in the defense set up as he outlined the State's program at a meeting of the Building Commissioners Association. He said that eventually plumbers, carpenters and other skilled workers in the building trades would be registered so that lists would be available in the event of an emergency.

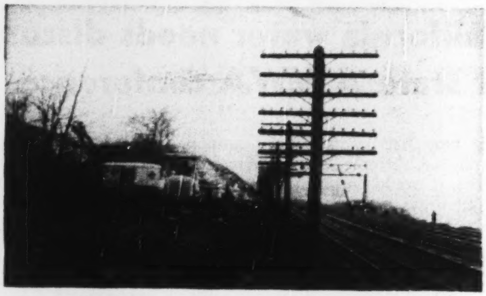
County defense program—New officers have been appointed in the utilities division of the Marion County, Ind., Civil Defense program. John Siegesmund, assistant chief engineer at Eli Lilly & Co., has been assigned as engineering deputy, and Marshall Abrams, executive secretary of the Indianapolis Construction League, has been named deputy of rescue service.

Drafting municipal employes—The United States Conference of Mayors has prepared a statement about the drafting of municipal employes. In part, it reads: "It is urged that prompt consideration be given to deferment of policemen and firemen as well as other municipal employes serving in essential municipal departments such as health and hospitals."

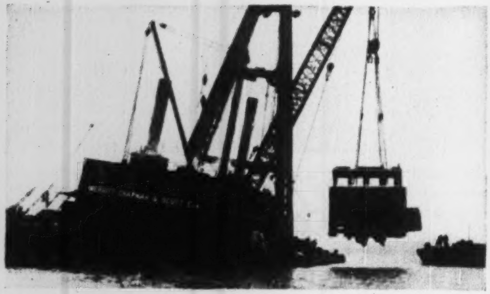
Prefabricated shelters—The A-Bomb Shelter Corp. of Teaneck, N. J., is establishing a chain of franchised distributorships from coast to coast for its new prefabricated shelter for private homes. The company has developed a home bomb shelter with entrance from the basement but separate escape hatch in the rear yard.

Builder readies tap on Hudson

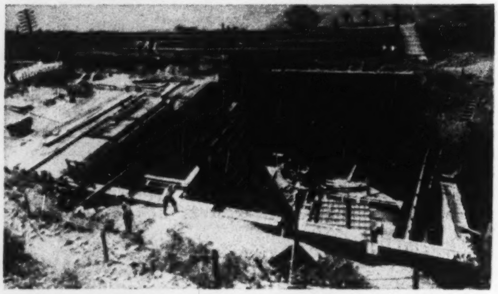
. . . Tests of pumping plant made as Nov. 15 deadline is reached



MARCH . . . Ground breaking was without ceremony, without delay. Work started the Monday after contract signing.



JUNE . . . Lowering of the 140-ton timber intake crib 650 ft off-shore was the start of underwater pipeline laying.



JULY . . . Concrete walls of substructure form channels in which river water will be screened, chlorinated.

NOV. 15 WAS THE DEADLINE. Tuller Construction Co. and A. J. Dillenbeck had been given eight months to design and build New York City's emergency water tap on the Hudson River. Final completion was imminent as this issue went to press.

Very briefly, the job involved an intake in the river, a 100-mgd pumping plant on its bank and a short steel pipeline from the pumps to Shaft 6 of the Delaware Aqueduct, near Chelsea, N. Y.

The order to begin work came last Mar. 15 after signing an unusual contract that called for design as well as construction (ENR June 29, p 33). It offered a $5,000 bonus for each day the $2,684,000 job might be completed short of the Nov. 15 deadline—and set an equal penalty for not meeting that date.

• Fast starter—Tuller lost no time. His first task was organization of field forces. To muster the needed talents for early stages of the work as quickly as possible, he chose to subcontract much of the job to specialists, who were tooled, manned and ready to go to work immediately.

Second big problem was quick acquisition of mechanical equipment. Cooperation was the keynote—traditional formalities fell by the wayside—as suppliers, designers and Board of Water Supply engineers concentrated on early delivery dates.

The contract was signed on a Wednesday noon. Digging started the following Monday, with nothing but the sketchiest preliminary drawings as a guide. From then on it was a race—field against office—with field forces often in the lead as construction started on phases of the work before finished designs were available.

• No ceremonies—There was no ceremony as first ground was broken near Shaft 6. The first 'dozer on the job just dug right into the sidehill—made up of tunnel spoil thrown up there at the shaft-site when the Delaware Aqueduct was built—to clean off the shale bedrock. Thomas Crimmins Contracting Co., New York, was excavation subcontractor.

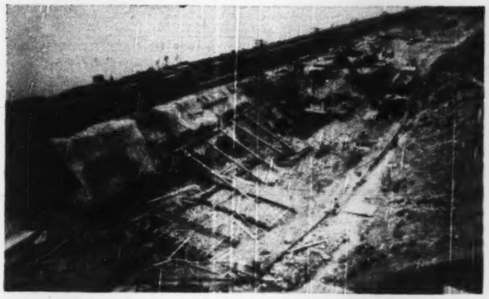
Bedrock, being shale, broke easily—too easily. And being formed in vertical layers, it was tricky stuff to work in. The hole had to go down about 35 ft in this material on its uphill side, and all concerned were much happier when that vertical rock face was put safely behind the concrete substructure wall.

The downhill side of the excavation was not as high (30 ft), but it was uncomfortably close to (about 20 ft away from) the nearest of four mainline New York Central tracks that skirt the job. Shores were used to retain vertical rock on this side of the hole until substructure could be poured. The rock-face was covered with tarpaulins to keep spring rains from lubricating those ominous vertical seams in the rock. One small slide did occur and was stopped just 8 ft short of the tracks. Water was a worry in the rock faces, but it was no trouble in the bottom of the hole. One 4-in. pump did all the dewatering.

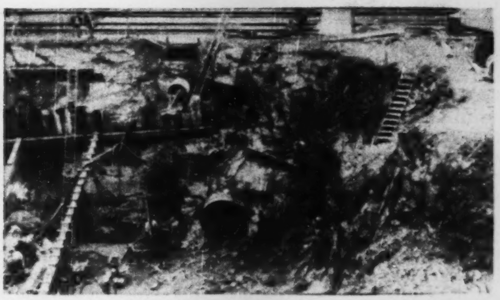
Excavation finished first in the south end of the 170-ft long hole. The concrete subcontractor, Brennan & Sloan, Inc., New York, moved right in to erect forms previously prefabricated on the bank; and concreting of the substructure started.

The concrete plant was set up to take advantage of the steep hillside: A 1-yd mixer was set directly under batching hoppers that were fed from a timber dumping platform built out from the access road farther up the hill. Trucks just backed onto the timber platform, directly over the plant, and dumped. Most concrete was buggied from mixer to forms.

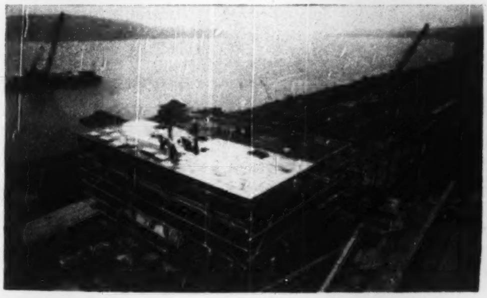
• A tunnel to dig—When the north end of the hole reached bottom, Crimmins began tunneling. He had to dig



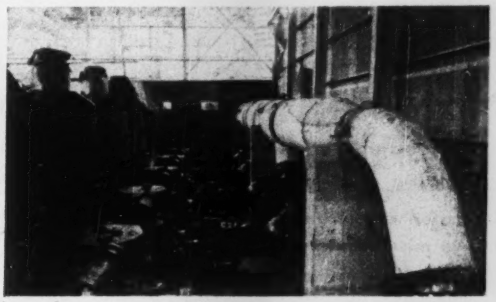
APRIL . . . Excavation was complicated by vertical-seamed shale. Tarpaulins kept rock dry; shores held it up.



MAY . . . Tunneling under railroad for 72-in. concrete intake made use of steel liners, left in place.



AUG . . . Steel went up fast and roof went on pumphouse end of plant first—so pumps could be installed.



SEPT . . . Installation of equipment was done while building siding was going on. Six pumps feed header, right.

under the railroad toward the river to set the 72-in. intake pipe—with invert El. −15 at the pumping plant.

Tunneling through shale, he used steel liner plates which were left in place and grouted. Lengths of reinforced concrete pipe—8 ft long and weighing near 8 tons—were hauled into the heading on greased steel straps and the tunnel rails. Pulling force was exerted by a crane parked at grade outside the excavation; its line went into the tunnel, around a sheave anchored at its furthest liner-plate, and back out to tie onto the section of pipe to be hauled into place.

Space between the concrete pipe and the steel tunnel liners was also grouted to complete the tunnel section.

The intake tunnel was carried 115 ft from the plant—about 10 ft past the shoreline and as far as adequate rock cover existed. There it was stopped, bulkheaded and left until underwater excavation from the river side broke through to make the junction.

Out at the river end of the intake line—650 ft off-shore—Spearin, Preston & Burrows, Inc., New York, had started preparing the riverbed at El. −61.5 to take the intake crib. Sixteen timber piles were driven and cut off. Then, on June 15, Merritt-Chapman & Scott Corp.'s floating derrick, Monarch, lowered the 140-ton timber crib into place.

The 72-in. intake pipe was laid in 12-ft lengths from crib to shore with all underwater operations directed by divers. Timber pile bents were placed to carry the line's outer 300 ft or so. The rest, near shore, was laid on precast concrete sills in gravel. The entire length was covered with backfill topped by a riprap blanket.

When the underwater operations reached the rock-tunnel heading that had been pushed out from shore, a special transition piece of pipe was set to complete the line. The Arundel Corp., Baltimore, did the underwater rock excavation necessary to make the connection.

Meanwhile, Crimmins had dug a cut-and-cover trench right under the railroad tracks in which he laid a 36-in. pipeline just above river level to carry off drainage, surge overflow and unwatering pump discharge. It was necessary to span this trench with a rail and timber deck to carry the heavily traveled tracks during the digging operation.

Back in the building excavation, concreting was completed. High 18- and 24-in. thick substructure walls were formed and poured from El. −15 to El. +15—30 ft from intake level to operating floor. Most of these walls (they divide screen channels, form chlorine baffles, and separate three pump-well sections) were poured continuously from bottom to top at a rate of about 4 ft per hour.

Concrete forming was most intricate at the screenhouse (north) end of the plant, where gates, trash racks and traveling screens had to be installed; but no serious difficulties were encountered.

Structural steel was fabricated and erected by Belmont Iron Works, Philadelphia; roofing and siding was put on by Henry A. Olson, Inc., Poughkeepsie, N. Y. Siding is galvanized, corrugated steel backed by a 1-in. thick insulating board with ⅛-in. cement asbestos inside finish. The contract had specified that walls of the "temporary" structure have a heat transmission coefficient not over 0.30.

• No waiting—Tuller started equipment installation before the building was fully enclosed. Six 14,000 gpm vertical turbine pumps were installed, each to be driven by a 2,500-hp electric motor. The pump room's traveling, 15-ton overhead crane did the installing. Each pump is equipped with a 20-in. cone check, a 24-in. motor operated gate and a 10-in. surge relief valve.

The station's 54-in. dia steel discharge line was laid up the hill in a trench to the shafthouse (with joints field welded and checked by radiography). There it was joined at the shaft cap to the line leading down the shaft into the aqueduct. Large concrete blocks were poured to restrain bends in the pipe, which will have a 265 psi working pressure.

Inside the shafthouse, Tuller had tight quarters in which to handle long lengths of pipe and large fittings. The 54-in. line was divided into two 36's, and these were brought in on opposite sides of the shaft cap through new 36-in. cone valves and into existing bronze gate valves.

Meanwhile, Blumenthal-Kahn Electric Co., Baltimore, finished up a 15,000 kva substation, installing equipment designed and built by GE with speed to match that at the jobsite.

All was ready. Central Hudson Gas & Electric Corp. prepared to turn on the juice. The pumps were set to spin. An emergency source of water was about ready for thirsty New York City—now not so thirsty after a season of good rainfall and conservation.

• **P.S.**—Tuller must now—according to his contract with the Board of Water Supply—operate the plant on BWS order for a period of four months from the completion date.

Clark E. Wallace was project manager for Tuller-Dillenbeck; Pirie J. Maloney was superintendent in the field. Hubert Curley headed the BWS resident staff.

Notes on legal decisions

Summaries of decisions relating to construction prepared by I. Vernon Werbin, counselor at law and engineer, New York author of Legal Phases of Construction Contracts (McGraw-Hill)

Rescission of contracts due to misrepresentation

A contractor is entitled to rely upon representations made by the agents of a municipality as to subsoil conditions that would be encountered during the performance of the work, notwithstanding an exculpating clause in the contract, where the falsity of the representation could not reasonably be discovered upon an examination of the site of the work.

The contractor is entitled to reasonable time within which to determine whether the condition encountered is merely local or sufficiently substantial to justify his abandonment of the work as against the contention that the contractor had waived his right to rescind and recover for the work done by proceeding under the contract after full knowledge of the facts.[1]

The contract in this case involved the construction of a water-supply tunnel for a municipality. The plans furnished bidders contained a profile of borings made, which purported to show the nature and character of the ground through which the tunnel was to be driven. Typical cross sections of the work were also shown on the plan and all of them indicated the presence of solid rock in the area of the tunnel section. When the work was done, instead of encountering solid rock as indicated by the plans, the contractor encountered mud, clay and boulders, which greatly increased the cost of the work. The court held that the contractor was entitled to rescind the contract and recover the damages resulting from the false representations.

In another case, the construction of a sewer was involved. When the work was being performed the contractor discovered that the entire site of the work was underlaid with a compacted mass of large broken rocks which greatly increased the cost of doing the work. After the work was completed the contractor learned that the municipality had placed the rocks under the site of the work many years previously, and had failed to disclose this fact to the contractor at the time bids were asked. The contractor thereupon rescinded the contract and brought the action to recover the difference between what was paid to him under the contract and the actual cost of performing the work. He was allowed a recovery.[2]

(1) Rae v City of Reading, 24 F. Supp. 566.
(2) Frank Nordone Contracting Co., Inc. v City of New York, 69 N.Y.S. 2d 259, 269 App. Div. 1035.

Right to reject bid

Where the advertisement inviting proposals for a construction job stated: "The board reserve the right to reject any bid not in accordance with the conditions of this advertisement, or to reject all bids * * *," the court held that it could not direct the award of the contract to the low bidder.

The court in its opinion stated that the notice for proposals expressly reserved the right to reject any bid. The city charter did not require the board to award the contract to the low bidder; it provided that "all contracts shall be awarded by said board to the lowest reliable and responsible bidder."

The court held that under the above circumstances the board had the absolute power to determine what contractors were responsible and reliable and the court would not interfere with their judgment when so exercised.[1]

In another case,[2] the court stated: "The mandatory injunction applied for to compel the letting of the contract to appellants is in the nature of a mandamus, and is an attempt to control a discretion that is judicial in nature. The duty of examining the proposals, determining the responsibility, and awarding the contract is judicial in nature and character, and the awarding the contract is a judicial act, which is not within the province of courts to control by mandamus or mandatory injunction."

(1) Kelly et al. v City of Chicago, et al., 62 Ill. 279.
(2) Panozzo v City of Rockford, 28 N.E. 2d 748.

Breach of contract

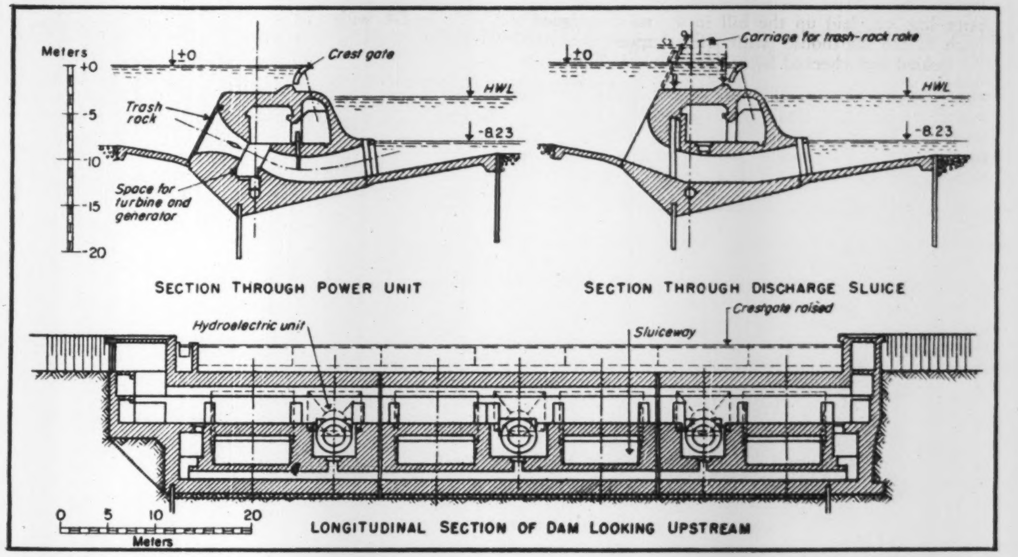
Where a material breach of contract does not indicate any intention to renounce or repudiate the remainder of the contract, the injured party has an election of continuing performance or of ceasing to perform, and any action indicating an intention to perform will operate as a conclusive choice, which however, does not deprive him of a right of action for the breach that has already taken place, but only deprives him of any excuse for ceasing performance.

Although a party who has been injured by a breach of contract must make reasonable efforts to mitigate his damages, where the law authorizes him to complete performance under the contract, the party is entitled to recover damages necessarily caused by the other party's breach.[1]

In this case a municipality entered into a contract for the removal of garbage. The contract provided that the city would enforce a regulation requiring residents to separate combustible and noncombustible garbage. The city failed to enforce this regulation. The city also was required to provide grounds where the garbage was to be dumped. It failed to furnish such dumping grounds. The court held that the failure of the city to perform these acts constituted a breach of the contract.

The court held that the garbage collection contractor was entitled to recover as damages the cost of renting dumping grounds and the added expense of hauling the garbage thereto. A contract provision against compensation for extra work did not protect the city from liability for damages for breach of contract.

(1) Frank Stamato & Co. v Borough of Lodi, 71 A 2d 336 (Supreme Court of New Jersey, Jan. 16, 1950.)


Meters
+0
-5
-10
-15
-20
±0
Crest gate
HWL
Trash rack
-8.23
Space for turbine and generator
SECTION THROUGH POWER UNIT
±0
Carriage for trash-rack rake
HWL
-8.23
SECTION THROUGH DISCHARGE SLUICE
Hydroelectric unit
Sluiceway
Crestgate raised
0
5
10
20
Meters
LONGITUDINAL SECTION OF DAM LOOKING UPSTREAM

THE FREILASSING PLANT on the Saalach River near the border between Bavaria and Austria has three hydro-electric units of the submersible type built within a low concrete weir across the river.

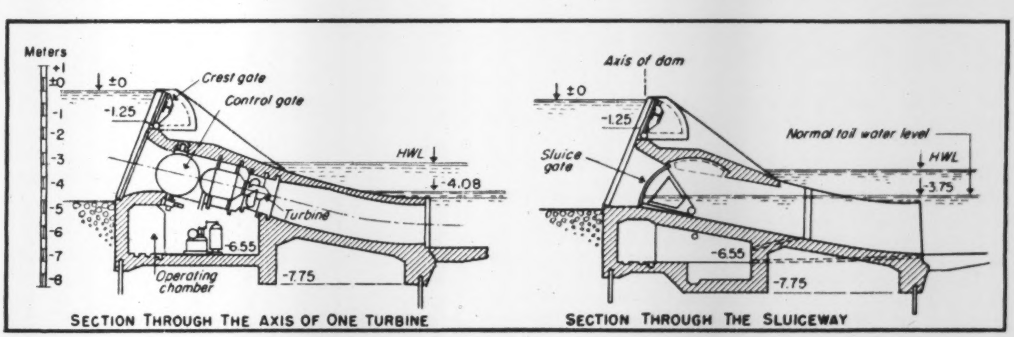
Submersible hydro plants increase low-head output

HYDRAULIC TURBINES mounted in conduits through the base of low overflow dams now are being used at four points in Austria and Germany to produce more electric power than would be possible with any other type of hydro-electric generator. As the chambers for the generating equipment are formed within the body of the dam, where water passes over them at time of high runoff, the name "submersible" has been applied to this type of power station.

The four power plants are: The Rostin station on the Persante River in Pomerania, built in 1936; Steinbach station on the Iller River in Bavaria (1937-38); Denklinger station on the Lech River in Bavaria (1940), and the Freilassing station on the Saalach River at the Austria-Bavaria border (1942). All are run-of-river plants at which the normal head is materially reduced by backwater when the river is in flood.

This account of the significant characteristics of the four power stations is taken from a more complete description published in the French journal LA HOUILLE BLANCHE for September-October 1949 (P.O. Box 41, Grenoble, France, single copies 650 fr.).

• Conditions dictate – Europe has many power stations located at similar sites where restrictions such as towns, railways and highways do not permit any material increase in water levels above flood stage. At such sites the normal practice is to build a low weir across the main channel, surmounted by large crest gates that can be raised at time of flood. Power stations, generally are located at one or both ends of the


Meters
+1
±0
-1
-2
-3
-4
-5
-6
-7
-8
±0
Crest gate
Control gate
-1.25
HWL
-4.08
Turbine
-6.55
-7.75
Operating chamber
SECTION THROUGH THE AXIS OF ONE TURBINE
Axis of dam
±0
-1.25
Sluice gate
Normal tail water level
HWL
-3.75
-6.55
-7.75
SECTION THROUGH THE SLUICEWAY

AT THE ROSTIN PLANT the operating chamber for the turbines and sluiceway gates was built below the power conduits and sluiceways in the bed of the river. The turbines are small, about 700 hp.

POWER STATIONS IN EUROPE HAVING SUBMERSIBLE UNITS BUILT WITHIN THE DAM

Plant	Built	Head feet	Flow cfs	Max. flood cfs	Installed kilowatts	Number of units
Rostin	1936	9.1	445	2,800	530	2
Steinbach	1937–38	28.7	3,530	31,700	10,000	4
Denklingen	1940	26.7	4,240	41,650	11,100	6
Freilassing	1942	27.2	2,120	35,300	5,600	3

dam, out of the river if possible, but more frequently encroaching on the channel.

Where encroachment is necessary, the design is complicated by the necessity for providing spillway capacity large enough to pass the flood flows. Also, during floods, backwater resulting from restrictions at one dam frequently submerges the tailrace of the next plant upstream to such an extent that the plant's output is greatly reduced. Some have to be shut down due to loss of adequate head.

• Design considerations—The submersible power stations are designed to eliminate channel restrictions and minimize backwater effects. How that is accomplished will be better understood by an examination of the accompanying drawing showing sections through Freilassing station. By building the chambers for the generating equipment within the control weir itself, no restrictions of any significance are placed in the channel; the crest of the spillway can extend across almost the entire valley if necessary.

Discharge of floods is further facilitated by the discharge conduits formed through the base of the dam on each side of the conduits serving the generating equipment. These discharge sluices also serve to improve the power output of the plant. When open during times of flood flow, their jet action below the dam depresses the tailwater and so has the effect of recovering in part the head that otherwise would be lost due to high tailwater.

Finally, with an operating gallery across the entire river channel within the dam there is no need for piers on the spillway crest to support crest gates. Gates can be of the collapsible type operated from within the dam.

This arrangement not only adds to the available length of the spillway but also makes the spillway more efficient as compared to a similar length between piers because all turbulence at piers is eliminated.

The uniform flow over practically the entire length of the dam that is produced by this arrangement also assists in maintaining a higher effective head on the turbines.

From an operating viewpoint this arrangement materially reduces troubles due to ice in winter, facilitates the discharge of floating matter or matter moving along the stream bed that can pass the trash racks, and reduces scour below the dam by spreading the flow over a wider area and by insuring the formation of a "surface roller" below the spillway in which the energy of overfall is dissipated.

• Power generating units—Turbines installed in these plants are of smaller capacity than would be used if Francis type or Kaplan turbines were to be installed in a power station at one end of the dam. Smaller units make it possible to distribute the flow more uniformly across the channel, which helps to keep down the tailwater level during flood flows. Also, with smaller units, low flows can be used more efficiently.

From a construction viewpoint, conduits for small units can be built more easily through a low dam and can be spaced better in relation to the discharge sluices through the dam. As will be seen in the accompanying cross-section of the Freilassing dam, much less complicated form work is required for these conduit-type turbines as the axis of the turbine is in the normal line of flow. No spiral casing is required for the turbine and no elbow draft tube.

When the Lech project was built, comparative bids were taken on two spiral-casing Kaplan-type turbines and six conduit-type runners. The total weight of metal in the latter was 146,960 kg as against 225,180 kg for the Kaplan type. Similar savings were shown for the generators.

A major problem in the design of these conduit type units was that of minimizing leakage between the runner band and the fixed parts of the enclosing pipe. It also was necessary to make certain that none of the leakage reached the electric generator, which has to be built around the pipe outside the runner.

Designers have succeeded in keeping the losses down to 0.001-0.2% at full discharge, and this small amount passes automatically to the draft tube. Corresponding losses in spiral-casing units are said to be as much as 1.3-1.6%.

Some of these propeller-type conduit units have fixed blades and some have movable blades, as in Kaplan turbines. Their efficiency curves are said to be comparable to those of Francis or Kaplan type turbines, being somewhat flatter in the maximum zone (88 to 92%).

Prof. A. Grzywienski of Vienna University, in commenting on this type of power plant in the July-August, 1950 issue, of La Houille Blanche, Grenoble, France, states that while the submersible type plant has undeniable advantages for some sites, the spillway type dam with a separate power house remains the most advantageous choice in the majority of cases.

Investigations begin for Delaware crossing

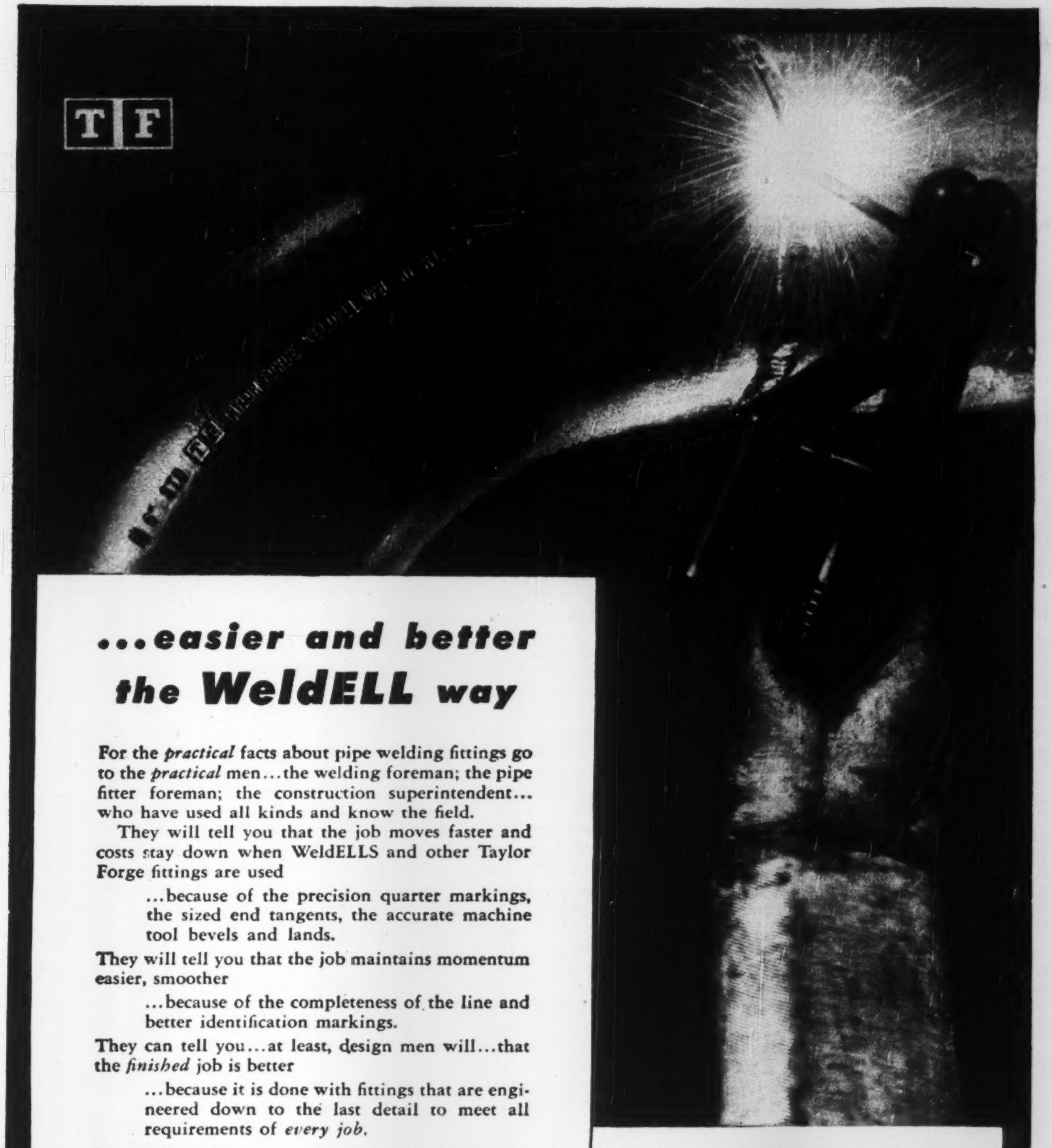
A board of bridge and tunnel engineers is actively engaged in solving the problem of a new vehicular crossing of the Delaware River below the present Philadelphia-Camden bridge. The board, appointed by the transportation committee of The Delaware River Joint Commission, consists of Frank M. Masters, Harrisburg, Pa., Othmar H. Ammann, Boonton, N. J., and Ralph Smillie, Essex Falls, N. J. All are outstanding bridge and tunnel men.

The board met Oct. 13 and made a personal investigation on both sides of the Delaware River from the bridge to points below Hog Island.

The Delaware River Joint Commission will pay its board of engineers $65,000 plus the actual cost of any borings required to determine subsoil conditions. The board will maintain at its own expense an office in Camden during the progress of the investigation.

• Traffic engineers engaged—In order to determine adequately the location in which the new crossing will be of greatest value to the public, the transportation committee has engaged the firm of Coverdale and Colpitts of New York to make an analysis of traveling habits and desires as shown by information gathered in a recent origin and destination survey of this vicinity, made by the States of Pennsylvania and New Jersey, the City of Philadelphia and the federal government. Fee for the firm's work has been fixed at $10,000.

The board of engineers and the firm will work together so that a report may be made to the commission. The latter, acting upon the advice of its experts, will plan the financing of the crossing and request the legislatures of Pennsylvania and New Jersey to grant formal permission to construct the crossing.



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Michigan issues report on pavement design study

- **Expansion joints found unnecessary except at intersections, crossings**
- **Dowels unsatisfactory for load transfer**

FINDINGS of a pavement-design study that has been under way since 1940 have just been issued by the Michigan State Highway Department. A second report covering durability studies on the same test road will be issued in the near future.

The Michigan Test Road is one of six built throughout the United States about ten years ago in cooperation with the Bureau of Public Roads. It consists of 17.8 miles of 22-ft wide concrete pavement on State Route 115 in Clare and Osceola Counties. The design project is 10.1 miles long and the durability project is 7.7 miles long.

Subgrade materials were generally well-drained sandy or gravelly soils—except for two areas where it was necessary to construct a 12-in. sand subbase. Soil density ranged from 103 to 113 lb per cu ft at 9 in. below the surface and moisture content ranged from 4.2 to 7.6% of dry weight.

• Concrete design—Concrete was designed according to the mortar-void principle. Specifications called for 2,500-lb compressive strength at 28 days and flexure strengths of 550 and 650 lb at 7 and 28 days. The cement factor was 1.375 bbl per cu yd.

Four types of pavement cross-section were used: A 9-7-9-in. cross-section; its approximate equivalent an 8-in. uniform; an 8-6-8-in. slab and its equivalent a 7-in. uniform.

Expansion joints were spaced to give sections 120, 240, 480, 900, 1,800 and 2,700 ft long, and contraction joints were spaced at 10, 20, 30 and 60-ft intervals. In some sections mesh reinforcing was used, either 60 lb per 100 sq ft or 37 lb for the same area. This reinforcing was laid continuously through some of the contraction joints.

Expansion joints were: One-inch bituminous fiber board with ¾-in. x 15 in. dowel bars at 15-in. spacing; one-inch bituminous fiber board and one 1¼-in. x 18-in. dowel at each of the four corners. 9 in. from the edge on both thickened-edge slabs and slabs of uniform thickness; standard one-inch bituminous board with no load-transfer device; air-chamber construction with one-inch opening and with top, bottom and sides sealed with an asphalt-latex joint compound and with ¾ x 15 in. dowels at 15-in. centers; and an air-chamber construction sealed on the bottom with asphalt-latex but at the sides and top with a premoulded rubber seal. Base units of the "Translode" type were used for load transfer in these joints.

A variety of contraction joint designs were used, ranging from a formed joint with ¾ x 15-in. dowels as in the expansion joints, to surface formed joints with aggregate interlock only, including some of the patented joint constructions.

• General conclusions—Results that are characterized by the Michigan Highway Department as of outstanding importance in the design of concrete pavements were summarized in the report. They were:

1. The satisfactory performance of long sections of pavement under full restraint indicates that expansion joints are unnecessary, except at such places as intersections, rail crossings, and structures, where excessive compressive stresses are introduced by expansion forces that are undesirable.
2. Adequate load-transfer devices are essential in all joints to preserve the mutual elevation of the abutting slabs.
3. The method of forming a contraction joint by grooving the surface of the pavement and subsequently filling the groove with a good sealing compound is far superior to the method of inserting a premolded bituminous fiber strip.
4. Continuous plate dowels are not satisfactory as load-transfer devices.
5. The commercially available asphalt-rubber joint-sealing compounds have greater durability than the mixed-on-the-job asphalt-latex mixtures and are far superior to the straight asphalt or tar products in common use for sealing joints and cracks.
6. Mechanical tamping of soil under forms produces more positive and uniform results than hand tamping.
7. Nothing has been learned which would definitely indicate that short slab construction is superior to long slab construction. Many advantages are to be gained by the latter practice by way of better riding qualities, lower maintenance costs, and better construction conditions.
8. Results so far indicate that the uniform cross section is equal in performance to that of the thickened edge section, with obvious advantages.

• Movement at joints—In the detailed discussion of the findings it is stated that without exception all sections of the pavement experienced their greatest movement in the first winter and that over the nine years there has been a gradual closing of expansion joints that has absorbed from 60 to 80% of the expansion space provided. On the other hand, most contraction joints increased gradually in width in the first five years but have changed little since then.

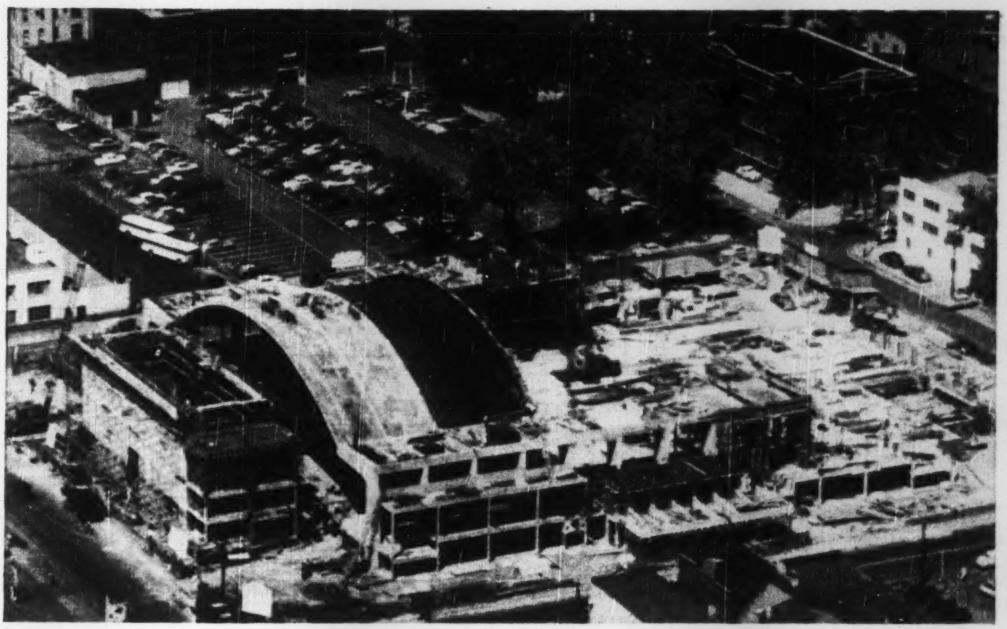
The installation of ¾-in. dowels at 15-in. centers was not adequate to prevent faulting of slabs at either contraction or expansion joints. Expansion joints without dowels developed measurable faulting after four years, the faulting being much more frequent than at doweled joints. Also, the absence of dowels at the intersection of longitudinal and transverse joints produced a serious maintenance problem on the section.

Due to the large seasonal movement at contraction joints, aggregate interlock, in itself, is not sufficient to provide adequate load transfer.

The non-extruding premoulded fiber-board fillers were found to be more desirable than the air-chamber type for expansion joints. Use of these fiber-board strips at contraction joints and dummy joints was found to be detrimental, and the report states that unless great care is exercised both in placing these strips and during finishing operations, irreparable damage may result.

The report stressed the importance of rigid examination inspection, and control over the preparation of subbase and subgrades for concrete pavement construction".

In the slabs built with and without reinforcing, the crack pattern was very similar regardless of reinforcing. Both the reinforced and unreinforced 120-ft sections have not cracked and the 600-ft sections are cracking in a similar manner, but cracks formed sooner in the unreinforced sections. The 600-ft reinforced section developed six cracks and the unreinforced section has only four cracks. "Perhaps the most remarkable thing noted from this study is the continuous resistance of the long slabs, both reinforced and unreinforced, to further breakup, according to the report's authors."



ARCHED CONCRETE ROOF supported on cantilevers provides large unobstructed floor area, with low cubage, for auditorium portion of war memorial in Syracuse, N. Y. Forms were carried on unusually light, movable falsework.

War Memorial to serve many purposes

F. S. Merritt
Associate Editor
Engineering News-Record

Must a war memorial be merely a monument? The Board of Supervisors of Onondaga County, N. Y., doesn't think so. It is building a memorial in Syracuse that can be used for many purposes—conventions, theater, concerts, exhibitions and sporting events.

The Onondaga County War Memorial can be converted quickly from one type of assembly to another. This flexibility in the use of space was made possible by clever arrangement of facilities, movable seating, selective control of lighting, heating and ventilation and—to a great extent—by provision of a large floor area unobstructed by columns.

The roof, which is of thin-shell concrete arch construction, has a clear span of 204 ft. Its construction is unusual in that the arch has a rise of only 28 ft, yet the crown is nearly 65 ft above the floor at the center. This is achieved by supporting the arch on cantilevers, which extend over balconies on both sides of the structure.

• **Design won competition**—The idea for a war memorial auditorium was conceived by public-spirited Syracuse businessmen, who had noted the city's need for such a facility. But they couldn't build and operate it as a commercial enterprise because of high interest costs and taxes. Investigation showed, however, that a county-owned arena, exempt from city and state taxes, could operate in the black. Therefore, when the Onondaga County Board of Supervisors was considering a memorial dedicated to veterans of the two world wars, a multi-purpose building was proposed and won approval.

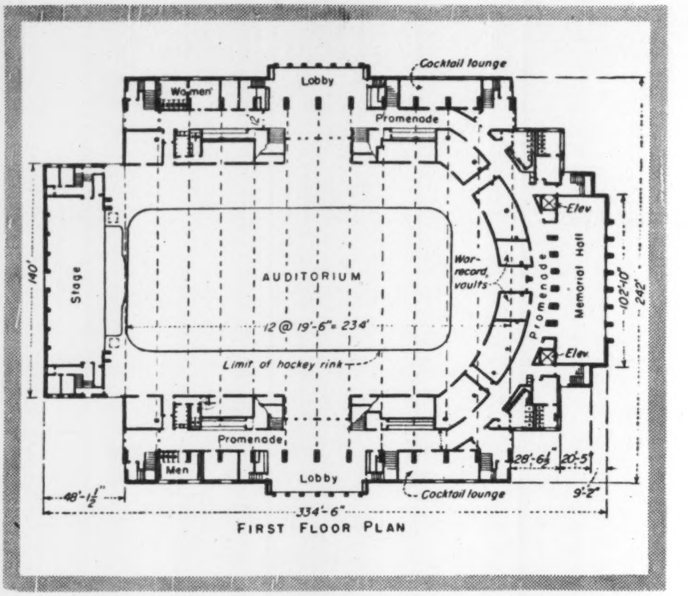
Upon passage of an enabling bill by the state legislature, the county appointed a 9-man commission to build and operate the memorial. Then, bonds totaling $3,500,000 were sold at 1.6% interest to finance construction.

The commission chose a site in the business district near existing county buildings. About half the land was donated by the businessmen and one-quarter by the city, the remainder being purchased by the county.

The next step was to select an architect. In consultation with the Syracuse branch of the American Institute of Architects, the commission held a competition, and the contract for the design was awarded to Edgarton and Edgarton, Architect-Engineer Associates of Syracuse.

To develop their prize-winning design, the Edgartons analyzed auditoriums and sports arenas that had been built during the past 20 years. They selected concrete for the structure because it was structurally suitable for their design; because delivery schedules for cement seemed more certain than those for steel; because a high percentage of local labor could be used; and because the concrete designs showed up well in cost comparisons. Finally, they chose a cylindrical roof supported on reinforced concrete cantilevers.

Detailed studies worked out with Ammann & Whitney, consulting structural engineers of New York City, showed that this design would provide a large, unobstructed floor area with low volume of enclosed space. Excessive cubage was undesirable because of the added load on the heating and ventilating equipment. This design had the additional advantage that in reducing the arch span (thus lowering the intensity of the thrust) the cantilevers made possible reduction in sizes of members and costs of the structural framing and foundations.



AUDITORIUM can be used for sporting events, conventions, opera or theater.

The final design called for a 242x334-ft building consisting of three reinforced concrete structures--a memorial hall, a stagehouse and an auditorium—separated by expansion joints.

• Memorial Hall—The north end of the building is devoted exclusively to commemorative purposes. On the main floor is the Memorial Hall—a room 100x30 ft by 30 ft high, decorated with murals and bronze plaques with names of the war dead. A suspended lighting fixture is in the form of a gold star. On the second floor is a 600-seat auditorium.

Memorial Hall is of rigid-frame construction. Exterior walls are limestone backed up with 8-in. cinder block, and interior walls are finished with marble. Floors are terrazzo inside a marble border. The ceiling is acoustical plaster.

• Stagehouse—At the south end of the building is the stagehouse—102x37 ft by 79 ft high, flanked at both ends by 41-ft high leantos. The latter contain dressing rooms on the first two floors and space for mechanical equipment on the third.

The stage will be one of the largest in the country. The proscenium opening is 85 ft wide (the width of the hockey rink in the auditorium, so that seats can be placed on the stage for sporting events) and 27 ft 8 in. high. Supported on two pairs of 2x5-ft pilasters and the stagehouse walls, the proscenium arch is a concrete beam 10 in. thick and 48 ft high. It is also the closure wall for the end of the stagehouse, which extends 14 ft above the high point of the cylindrical auditorium roof.

Dimensions of the stage can be increased by using a movable forestage, 65 ft long by 13 ft wide. Also, the forestage, when lowered, serves as a pit for a 100-piece orchestra or, when needed, as an elevator for moving heavy equipment between the basement and the auditorium.

The exterior of the stagehouse, up to the top of the first story, consists of a 3-in. limestone facing and a 10-in. concrete back-up wall. Above this level, the leantos have a modular-brick facing, backed up with 8-in. cinder block. The rest of the stagehouse has an 8-in. concrete wall faced with precast concrete panels and stiffened on the inside by light pilasters at 11½-ft intervals.

The precast panels, made of 5,000-psi air-entrained concrete, are 8x8-ft by 2¾-in. thick. They are scored in a 4x4-ft pattern with V-shaped grooves, to be in scale with the limestone facing below. In building the wall, the contractor used the precast panels as the outer form for the concrete backup.

• Main Auditorium—Between the stagehouse and Memorial Hall is the 211x250-ft auditorium structure. Entered through lobbies at either side, the main floor contains a 138x250-ft auditorium, or sports arena, surrounded by the permanent concourse, or balcony, seating 4,000; team rooms; rest rooms; concessions; multi-purpose rooms; war-record vaults and a memorial promenade on two floors. (The multi-purpose rooms can be used for small assemblies, checking, dressing or storage.)

On the second floor, along the sides of the structure, are assembly rooms, offices, concession bars and more multi-purpose rooms. Above this level, extending the length of the auditorium on both sides, is a service gallery with space for television equipment, radio broadcasting and the press. The basement offers 50,000 sq ft of floor area for exhibitions or automobile parking, and an assembly room, storage room, commissary and refrigeration room.

The seating capacity of the main auditorium for different types of events is varied by using movable seats or by cutting off balconies and excess floor space with curtains. For conventions, boxing or meetings, a maximum of 9,000 can be seated; for hockey games, 6,800; for basketball, 8,400; and for theatrical or opera purposes, 2,000 to 9,000.

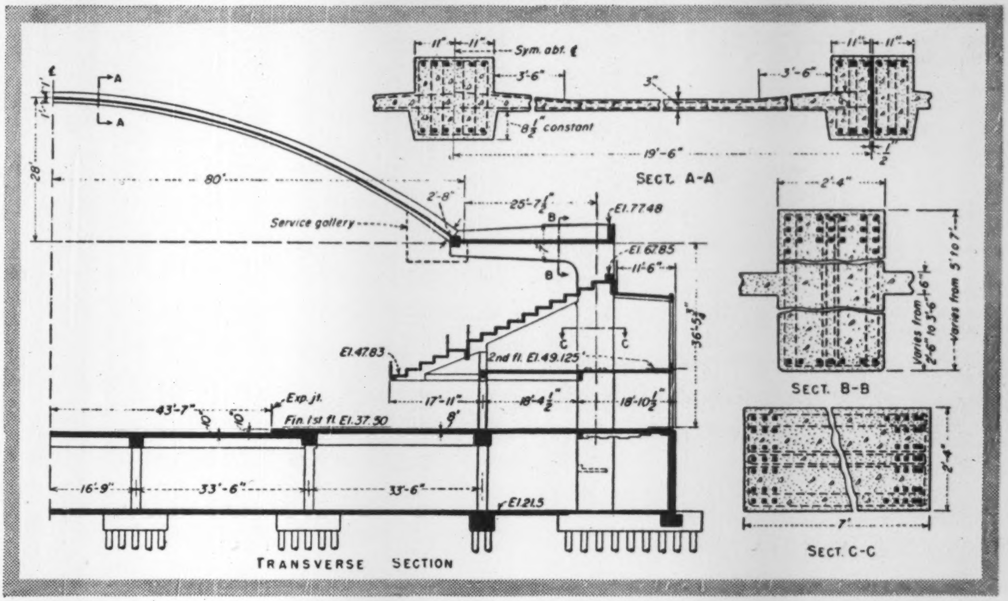
The exterior of the auditorium structure, like the stagehouse leantos, is faced with limestone up to the top of the first story and with modular brick above. At entrances, however, the limestone extends to the coping.

The backup is 8-in. cinder block, and the interior is furred with metal and plastered. Room windows have aluminum sash, sills and lintels.

Except under the hockey rink, the main auditorium floor is a two-way reinforced concrete slab, 8 in. thick, supported on columns about 33½ ft apart. It was designed for truck loading and to serve as a horizontal tie for the structural frame. The structural slab under the rink is 10 in. thick and is depressed 10 in. below the main floor. It is brought up level with 4 in. of cork insulation and 6 in. of concrete slab containing the brine pipes. The floor is finished with 1 in. of light-green cement topping, hardened and densified.

Promenades and lobbies have terrazzo floors and walls faced with 8x16-in. glazed tile. Names of living veterans will hang in glazed frames in the promenades.

The entire building, including the basement floor, rests on concrete-filled,



LONG-SPAN ROOF and clever arrangement of facilities make for flexibility in converting the auditorium from one use to another.

steel-pipe piles extending through 50 ft of soft clay. The 8-in. thick basement slab rests on a pile at the center of each bay and on the cap of the column piles. It is reinforced in two diagonal directions, so that the slab spans were reduced nearly 10 ft—from 33½ ft to 23 ft 8 in.

• **Thin-shell roof**—The roof of the auditorum is a 3-in. thick, arched concrete shell, stiffened and carried by concrete ribs spaced at equal intervals. The thickness increases gradually over a distance of 3½ ft to 5 in. at the ribs, and over a distance of 9 ft to 5 in. at the edge beam. Reinforcement is wire mesh, placed at the top and bottom of the slab.

The roof bays at each end of the auditorium, however, are made of precast concrete slabs. These rest on steel angles on the arch ribs and on the walls at the stagehouse and Memorial Hall, thus permitting relative movement between the auditorium roof and the two adjoining structures.

The ribs are spaced 19½ ft apart. Spanning 160 ft, with a rise of 28 ft, they are 22 in. wide and vary in depth from 2 ft at the crown to 2 ft 8 in. at the spring line. The center of the shell is a constant 10 in. above the soffit. Reinforcement consisting of 1⅛-in. square bars is placed symmetrically at top and bottom of these arches.

Alternate arches consist of two half ribs separated by ½-in. cane-fiber insulation board. This joint divides the barrel into short length longitudinally, so that expansion and contraction may occur freely in the separated double bays. It also facilitated the pouring operation, since two bays were cast at a time.

The edges of the arched roof are supported 36½ ft above the floor on horizontal cantilevers about 25 ft long. These beams are 28 in. wide and vary in depth from 5 ft at the inner end to 7 ft at the columns. The flat roof slab, which is 6 in. thick, intersects the beams at about their mid-point.

Columns supporting the cantilevers also are 28 in. wide but have a constant depth of 7 ft. Monolithic with the beams, they are reinforced with 1¼-in. square bars, which extend into the cantilevers. Since the cantilevers are also doweled to the arch ribs, the construction actually is rigid-frame.

The main columns also provide lateral stability for the 8-in. columns along the exterior of the building and support the concrete balcony. At each entrance, they support a marquee that cantilevers out 19 ft. 2 in.

Wood-fiber insulation board, 1 in. thick, covers the entire roof. It is topped with 4-ply, 20-yr bonded, asbestos-felt, smooth-surface roofing.

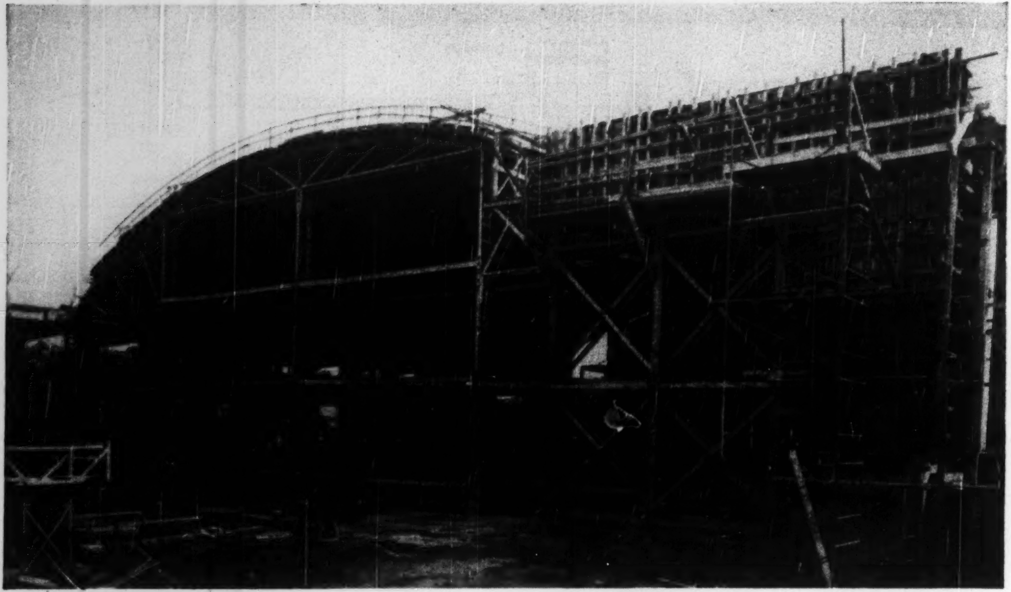
To form the ceiling underneath, acoustical material was sprayed on to a thickness of 1 in. However, the rib soffits, where lights and inserts for hanging decorations are located, were left entirely bare.

• **Heating and ventilation**—Because of the multi-purpose design of the building, solving the problems of heating and ventilation required ingenuity. The answer was to install separate fresh-air supply and foul-air exhaust ventilation systems for the main auditorium, basement exhibition area, basement assembly room and the third-floor assembly room, and mechanical exhaust systems for toilets, lockers, dressing rooms and concession booth.

Heating will be by steam, which will be supplied by a central heating plant now under construction for serving this and other nearby county buildings. Ventilation air will be heated for the main auditorium and the basement exhibition area. Other parts of the building will be heated with radiators.

The auditorium will be ventilated by four large fan systems, capable of circulating air at 170,000 cfm. All air will be passed through continuously rotating, self-cleaning oil filters, to eliminate dust. In the event that a haze from smoking builds up, a battery of powered roof ventilators can be operated to relieve the condition. In the summer, the full capacity of the refrigeration compressors (85 tons) used for making ice for the hockey rink will be applied to lower the air temperature and the humidity.

Air will be thrown out over the interior of the auditorium from nozzles at the lower part of the service gallery.



TIMBER FALSEWORK, with wide-spaced posts braced by steel tie rods, carried the forms for two bays of the roof. The falsework was moved easily, enabling the forms to be re-used several times. Jacks for lowering and raising the forms were inserted at floor level.

There are 280 of these nozzles, spaced 20 in. on centers. The balcony will be ventilated with air from nozzles located above the rear seats—10 nozzles in each bay. Exhaust outlets are at first-floor level under the edge of the balcony and at the 4-ft wide, longitudinal aisle near the center of the balcony.

The stage will be ventilated by a separate system, similar to that of the auditorium, to permit seating of spectators on the stage, when necessary.

• **Lighting**—Provision of a flexible lighting and electric power system was another complicated problem. Electrical service is distributed throughout the building through heavy feeders to about 65 electric panels. Feeders will run the whole length of the building in the service gallery on each side of the auditorium and along the basement ceiling. Connections to heavy electrical loads may be made at any point along the runs. Capped openings through the auditorium floor make it easy to run temporary wiring from the basement feeders to any point in the auditorium for the use of exhibitors.

Floodlights, spot lights and other special lights and electrical equipment may be mounted at any desired point along the galleries and supplied from the feeder circuits at this level. However, the main lighting for the auditorium comes from incandescent fixtures at 16-ft intervals on the soffits of the arch ribs. Each unit contains three 1,000-w downlight lamps. Circuits are arranged so that the units can be turned on in groups.

The lighting system for each type of event is designed to provide lighting intensities in accordance with the best modern practice. For example, for athletic purposes, 50 ft-candles will be supplied at floor level. And the stage has a lighting installation, including high-intensity and colored lights, capable of accommodating almost any type of presentation.

Robson & Woese, of Syracuse, N. Y., were consultants on the mechanical and electrical engineering. The International Auditorium Managers' Association Committee on New Buildings served as consultants until completion of preliminary plans.

• **Forms and Falsework**—Because the roof and supporting structure was designed as a series of 12 identical bays, the contractor was able to use his forms several times. He made up two sets for the cantilevers and columns—one for each side of the building—and one for the arched roof, each enabling two bays to be cast at a time.

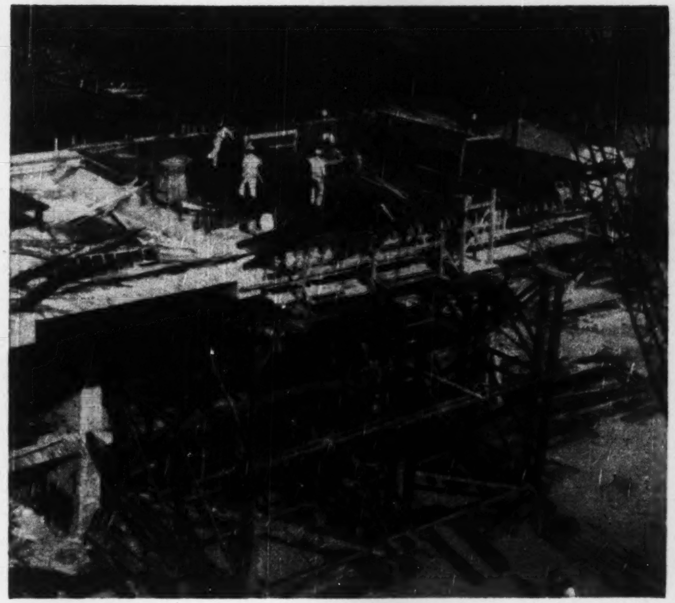
The falsework—designed by Timber Structures, Inc. of New York City and Portland, Ore.—was of lightweight timber construction, with wide-spaced posts braced by steel tie rods. It cost less to build than the conventional all-timber type and was easier to handle.

A falsework tower that could be moved about on steel rollers was constructed to support forms for two cantilever beams and two roof slabs. (The rollers were made of cut-off ends of the steel pipe piles.) Separate plywood forms were used for the columns and upper parts of the cantilevers.

The falsework consisted of 9 sets of well-braced 10x10-in. timber posts. The 6 sets under the concrete beams were each made of two 10x10's. Each line of paired posts supported a pair of glued laminated timber beams at the top for forming the bottom portion of the concrete beam and for supporting the joists carrying the roof-slab forms. These glued beams cantilevered out from the falsework along the sides of the columns to support the slab formwork, thus making exterior falsework posts unnecessary. As a result, the falsework could be moved more readily and as a unit.

Forms for the 6-in. roof slab were made of ¾-in. plywood, which was oiled before each use. (About half of the forms on the job were plastic-coated, having been transferred from another project, and no more of this type was available for purchase at the time.) They were supported on 2x14-in. joists spaced 12 in. c. to c.

A truck crane placed concrete directly in the forms with a ¾-cu yd



FORMS for cantilevers were carried on the movable falsework; those for main columns were separate. Rollers were cut-off ends of steel pipe piles.

bucket. A double bay was cast in 4½ hr.

After four or five days, when the concrete reached a strength of at least 2,400 psi, the forms were removed. The falsework was lowered by jacks onto the steel rollers, moved by a bulldozer toward the interior of the auditorium and then shifted sideways to the next position. Less than a day was required for this operation, and a complete cycle—from pour to pour—took two weeks. To assure full support for the arch roof, the cantilevers and columns were cast 28 days ahead of the arch.

• **Arch forms**—The lightweight falsework used to support the forms for two bays of the arched portion of the roof was made unusually strong to minimize deflections, but without excess material. It consisted of three lines of posts—one line under each concrete rib—and four segmental bowstring timber trusses on the top of each line. It was braced with ¾-in. steel tie rods on diagonals and 2x10-in. timber box beams horizontally.

Posts consisted of tied pairs of 10x10-in. timbers. At the bottom, each post had a flanged wheel to ride on a rail to the successive casting positions. Also, needle beams were bolted on for lifting purposes.

Trusses were built of paired members, separated enough to permit forming the lower part of the concrete rib between the two components of the top chord. (The rib soffit is a constant 8½ in. below the bottom of the 3-in. roof slab.) Upper parts of the rib were cast in separate forms.

Top chords of the trusses were cut to the shape of the rib soffits. On top, they supported 2x12-in. joists at 16-in. intervals. The joists, in turn, supported the ½-in. plywood forms.

A falsework bulkhead was designed by Timber Structures, Inc., for the leading edge of the pour that gave a true strike-off surface for the upper, curved face of the arched rib. This saved the contractor time and money.

• **Pouring cycle**—When the falsework was wheeled into a new position, jacks were placed under the needle beams and the falsework was lifted off the rails. Shores were placed in the basement under each of the posts to give additional support to the auditorium floor. Timber blocking and wedging were then placed under the posts to avoid the danger of twisting or failure of the jacks. Finally, minor adjustments in shape and height of the top chords of the trusses were made by tightening or loosening turnbuckles in the steel tie-rod verticals of the trusses.

Five runways were built across the forms for placing concrete. Two truck cranes operating on the first floor raised all materials needed to the top of the falsework, including the concrete, which was fed into a hopper at the end of a runway and then distributed by buggies. Casting a double bay took 8 hr.

The top surface of the concrete shell was shaped with a screed made of 4x6-in. timbers bolted to strap iron, the outer portions of the screed being beveled upward to provide the required slope near the ribs. A platform, which was always kept in a horizontal position by a metal arm, was attached to hold a vibrator and an operator. The screed was moved manually by pulling ropes run through a snatchblock, which was attached to the forms.

After about 6 or 7 days, when the concrete had attained a strength of 2,400 psi, the forms were removed. The jacks lowered the falsework onto the rails, and it was ready to be moved. Tow lines were run through snatchblocks on the second and fourth posts at the front of the falsework, then through pulleys attached to column dowels protruding above the first floor near Memorial Hall, and doubled back. Finally, the lines were connected to a tractor, which furnished the motive power. The operation of dropping the forms, moving the falsework and raising it again consumed an 8-hr day.

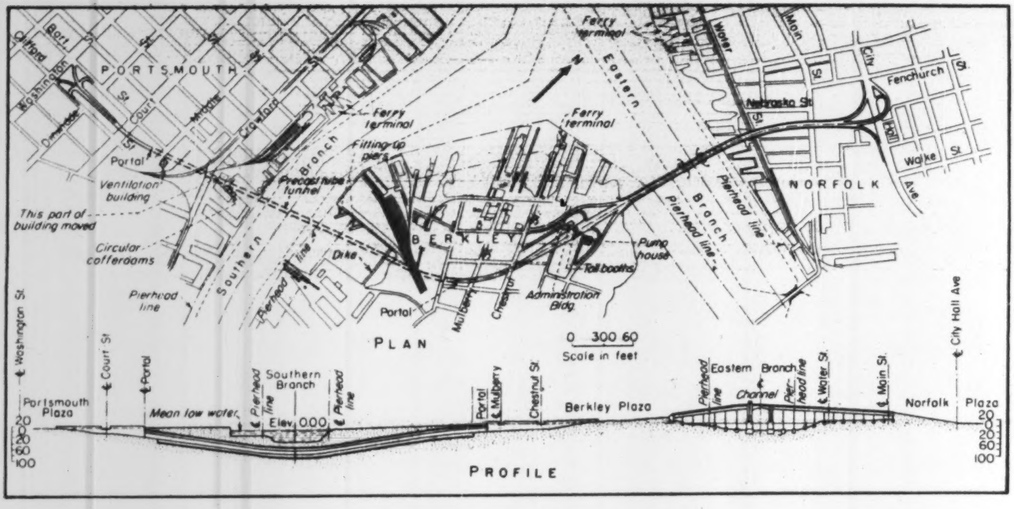
Concrete for the roof was required to have a strength of 3,750 psi. The mix contained 6½ bags of cement per cu yd, for rapid setting, and had a 2-in. slump. Regular cement was used, rather than high-early to help reduce shrinkage cracking.

• **Costs**—The Onondaga County War Memorial Auditorum is being built under a general contract for $2,475,000 and separate contracts for plumbing, $136,115; heating, $72,323; ventilating, $162,788; refrigeration and rink piping, $86,321; electrical, $272,027; seats, $32,295; forestage elevator, $17,809.45; two passenger elevators, $24,965.

Total costs, including design fees, but not land, movable seats and furniture, are estimated at $0.82 per cu ft for the 4,270,000 cu ft involved, or about $16.30 per sq ft of floor area. The building required 15,000 cu yd of concrete and 1,600 tons of reinforcing steel.

W. E. O'Neil Construction Co., of Chicago, was the general contractor, with William C. Pahl as superintendent of construction. Concrete-mix design, tests and inspections were made by the Pittsburgh Testing Laboratories, in a laboratory at the batch plant.

Construction was under the over-all supervision of H. Vincent Edgarton, engineering member of the designing firm.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Clifford
Washington
Dinwiddie
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Portal
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Circular cofferdams
Pierhead line
Southern
Branch
Ferry terminal
Fitting-up piers
Precast tube tunnel
Pierhead line
Dike
BERKLEY
Portal
Mulberry
Chestnut
Administration Bldg
Toll booths
Pump house
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℄ Mulberry
Chestnut St
Berkley Plaza
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PROFILE

Bridge and tunnel promise traffic relief at Norfolk

THE SAME water-veined topography that makes the Hampton Roads area of Virginia an ideal location for naval bases and shipyards has for years unmercifully messed up its land communications.

In large degree this is characteristic of naval-base cities the world over, but Norfolk and its neighboring communities of Portsmouth and Newport News can challenge the worst.

The inefficiency of the place, traffic-wise, during World War II was notorious. Valiant attempts on the part of municipal and state officials to handle the influx of people and vehicles kept the region functioning, but little more.

Yet some good came from the experience. In their less groggy moments the officials united on a firm resolve that "it mustn't happen again." A battle, if not a war, could well be lost by delays originated by traffic jams on the cities' narrow streets, their inadequate bridges or their dead-end ferry terminals. Spurred by this thought the officials initiated some long-range plans for major improvements.

Since the war, many of these improvements have been taken in hand, and now the biggest and the most important—a continuous connection between Norfolk and Portsmouth across the Eastern and Southern branches of the Elizabeth River—is actively under way. As shown on the map, the Norfolk suburb of Berkley occupies the land between the two river branches. The project connects it to Norfolk with a four-lane bridge and to Portsmouth with a two-lane tunnel. An expressway joins the two facilities across the narrow Berkley neck. The total cost of the project will be in the neighborhood of $18.5 million, provided by toll revenue bonds, and its capacity is focused on 1970's estimated traffic of 6 million vehicles.

• **War-born**—The tunnel-bridge project was actually born in the hectic days of 1942 when the legislature of the Commonwealth of Virginia created the Elizabeth River Tunnel Commission. A loan of $50,000 was obtained from the Federal Works Agency from its advance-planning fund, and consulting engineers were engaged to prepare some basic data. Traffic studies were entrusted to De Leuw, Cather & Co., of Chicago and preliminary engineering to Parsons, Brinckerhoff, Hall & Macdonald of New York and the J. E. Greiner Co., of Baltimore.

The engineers' first proposal was for a bridge connecting Norfolk and Portsmouth directly, by spanning the Elizabeth River below the entrance of the Southern and Eastern Branches. This was disapproved by the War Department, acting on the advices of the Navy that it did not want a bridge over the channel to the Norfolk Naval Shipyard up the Southern Branch.

The next scheme—and one that got approved—was the present combination project, with a tunnel under the controversial channel, a bridge over the Eastern Branch and a curving expressway connection between. It is actually more useful than the all-bridge route since it will serve the industrial section of Berkley and in addition provide opportunity for new highway outlets south and east.

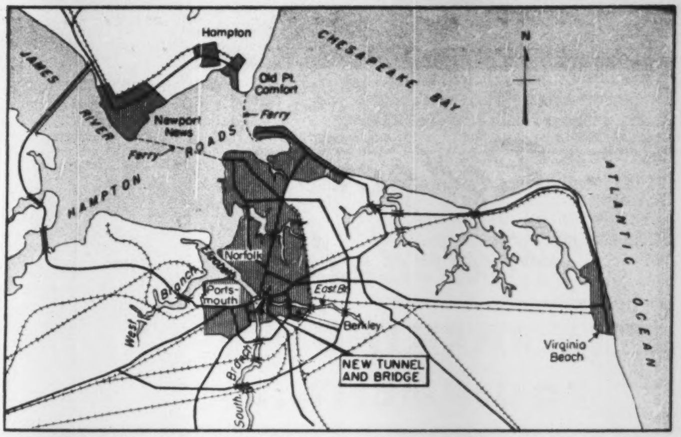
As the project has developed it has been divided into two parts, although both design and construction contracts are joint ventures. Thus, on design, the Parsons firm is handling the tunnel, while Greiner is in charge of the bridge and most of the street work in Berkley. On construction, Merritt-Chapman & Scott Corp., New York, is handling the tunnel, and Tidewater Construction Corp., Norfolk, the open tunnel approaches, the bridge and the plazas, but the bid was a joint one of $16,263,642.

• **Tunnel Design**—Two types of construction—cut-and-cover and precast sections sunk in a prepared trench—will be used for the 3,350 ft of tunnel, with the principal interest attaching to the 2,117 ft of precast sections under the river. These consist of 300-ft long steel tubes 31 ft in diameter encased and lined with concrete at fitting-up piers near the site. The steel tubes are reinforced with interior ring angles at 4 ft centers and with exterior octagonal diaphragms at 12 ft centers.

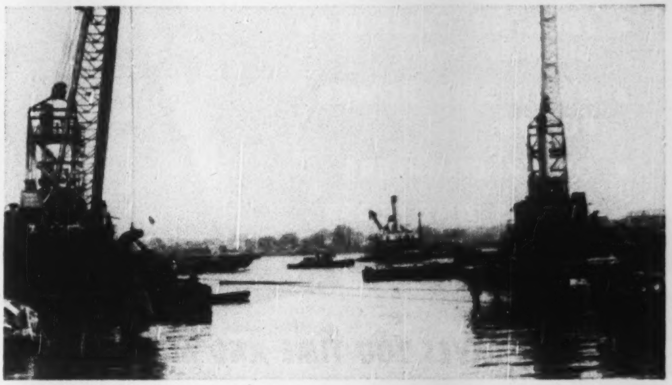
A roadway and ceiling will divide the tube into three sections. A departure from the conventional method of ventilating tunnels such as those in New York City will be made. Fresh air will be drawn in at both portals. The vitiated air will be exhausted through two exhaust ducts, one in the section below the level of the roadway, the other in the section above the ceiling. These exhaust ducts have their outlets in a single ventilation building on the Portsmouth side, where four exhaust fans having a capacity of 189,000 cfm each release the vitiated air to the atmosphere.

A 22 ft roadway with 14 ft vertical clearance is accommodated in the middle section of the tube. After the tube sections have been placed and connected, the trench will be backfilled to provide a minimum cover of 5 ft. over the tubes. In compliance with War Department rulings, a proposed channel depth of 50 ft will be maintained between pierhead lines in the Southern Branch. With this in mind and taking the diameter of the tubes into account (35 ft including the incasement) this means that the prepared trench at the center of the channel is nearly 100 ft below mean low water.

As shown on the drawing, the ventilation building is located on the Portsmouth side while the administration building and the toll booths are placed in Berkley. Tolls will be charged only on the tunnel. The bridge part of the project will be free to those traveling only between Norfolk and Berkley. This results from the fact that an existing inadequate bridge upstream will be removed when the new bridge is completed. For the privilege of using the new bridge free, the city of Norfolk will pay the Tunnel Commission about $190,000 annually.



HOW TUNNEL AND BRIDGE PROJECT will join central business sections of Portsmouth and Norfolk and tie into major road pattern of Hampton Roads area.



DERRICKS AND DREDGES work along centerline of tunnel to remove old piers and bulkheads and prepare a trench for the precast sections. Looking from Portsmouth across Southern Branch of Elizabeth River to Berkley.

• Tunnel Construction—At present, tunnel work is concentrated on preparations for tube sinking. At the Berkley end two fitting-up piers have been built alongside which the tubes will be concreted; the first tube is scheduled to arrive early in November. The trench has been dredged to partial depth entirely across the river, and work is underway at each shore where cuts into the bank must be prepared into which the end tubes can be floated.

At the west side the tunnel comes in under a slip, then under part of a building and the mainline of the Seaboard Railway. The building has had to be removed to make way for a dredge cut into the bank. This cut will be held with 60 ft dia circular sheetpile cofferdams, three on the side next to the building and one on the opposite side. Extending about 200 ft inland from the circular cofferdams sheeting made up of 36-in. beam sections will wall a 47 ft wide cut into which the last precast tube will be floated. A similar cut will be extended inland in which the cut-and-cover approach will be built. Two steel girders 10 ft deep and 106 ft long weighing 37½ tons each have been placed to carry the railroad tracks over the tunnel.

On the east side of the river a dike is being raised 6 ft above water entirely across the slip there to serve as a cofferdam protecting the open-cut work ashore. When the river trench is ready and the land approach tunnel built, an opening will be dredged through the dike and the end tunnel section floated in. Since the eastern shore is unencumbered with buildings, the contractor will not have to sheet the trench for the cut-and-cover tunnel section and the open approach. He plans to use wellpoints to dewater the excavation.

• Bridge—Extending 2135 ft between abutments, the bridge is made up of rolled girder spans 95 and 105 ft long in the two approaches to a double-leaf rolling-lift bascule span. This bascule, 178 ft c to c of bearings, will provide a 45 ft shipping clearance and thus will pass most of the boats in the Eastern Branch without being opened.

The bridge will have a 48-ft steel grating roadway. All piers are founded on timber piles.

When the Elizabeth River bridge and tunnel are completed in the spring of 1952 the traffic situation in the Hampton Roads area should be measurably helped. Not only through but local traffic will be served, since none of the existing useful streets will be taken out of service, either by the new roadway or the entrance and exit plazas. Cutting down of the present heavy ferry traffic will also be possible, and this will aid shipping.

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BOOK REVIEWS

Municipal reference data

The Municipal Year Book, 1950—Clarence E. Ridley and Orin F. Nolting, editors. 598 pp. International City Managers' Association, 1313 East 60 Street, Chicago 37, Ill. $10 postpaid.

A reference on municipal affairs, the 1950 Year Book contains a large amount of information on 2,042 cities: Data on current problems; facts and statistics on individual city activities; and analyses of trends by population groups.

Some features in the latest edition are: Health department data, garbage-collection practices, city-owned parking lots, expenditures and debt, pay rates for city jobs, and sewer-service charges.

A history of engineering

Man the Maker?—By R. J. Forbes. 256 pp. Henry Schuman, Inc. Publishers, 20 East 70th St., New York 21. $4.00.

This history of technology and engineering is a compact summary and review of man's scientific progress from the stone age to the present day, written entertainingly for the general reader. It points up such important milestones as the origin of the wheel and deals specifically with some two score branches of industry from chemistry to construction. Value for reference is increased by care in arranging and indexing, such as chapter grouping by epoch or era, namely, "Before 3,000 B.C." and "600 B.C. to 400 A.D." also by industries as "The conquest of distance–1750 to 1930" or "Steel and Electricity–1830 to 1930."

An epilogue points out dangers in a civilization, as of today, wherein scientific progress has far outstripped social progress.

Public works management

Municipal Public Works Administration—Fourth edition. Published for the Institute of Training in Municipal Administration by The International City Managers' Assn. 458 pp. 1313 East 60th St., Chicago, Ill. $7.50.

One of a series of eight volumes on municipal administration, this widely ranging text deals with public-works operations from the point of view of top-level administrators–city managers, department heads and bureau chiefs. Emphasis is on the "how" rather than the "what" of municipal administration. The objective is to aid the administrator in analyzing his duties and responsibilities and in suggesting approaches and methods that others have found successful from actual experience.

Some of the chapters are: Public Works as a Municipal Function; Refuse Collection and Disposal; Airports; Construction by Contract; Equipment Management; and Public Relations.

Probability and statistics

First Course in Probability and Statistics—Vol. 1. By J. Neyman. 350 pp. Published by Henry Holt and Co., New York 10. $3.50.

This book seems well suited for its intended purpose, that of serving as a text for a college course in the subject. Engineers find the subject useful as a basic tool in such fields as statistical quality control and hydrology. However, it is doubtful whether the individual engineer can effectively use this text either for a self-study course or on his reference shelf. On the other hand, it may be useful as a basic refresher if the individual has had some previous experience with the subject.

Grid design simplified

Die vereinfachte Tragerrostberechnung (Simplified Computation of Girder Grids)—By Fritz Leonhardt and Wolfhart Andrae. 250 pp. Published by Julius Hoffmann Verlag, Stuttgart, Germany. Price 32 German marks. Obtainable through Stechart-Hafner Inc., 31 East 10th St., New York 3.

Multiple girder structures, equipped with adequately proportioned cross-frames or diaphragms to distribute heavy concentrations and to reduce local deflections, are analyzed as "grids". Every effort to obtain an effective grid system will be rewarded by improved economy, security and durability of the structure.

Since grid systems are usually highly statically indeterminate, the conventional methods of stress analysis are too time-consuming for general use. The authors therefore have developed simplified methods and design tables to serve the needs of the practical designer. (Leonhardt himself is a practical bridge designer, having built the Rodenkirchen suspension bridge over the Rhine in 1941, and the new Cologne-Deutz continuous girder bridge in 1948.)

The book presents first a simple exact method of stress analysis for grids with only one cross frame. For more complex systems, a method using equivalent substitute loadings which are then superimposed (similar to the method of symmetry and anti-symmetry) resolves the structure into basic one-frame grids.

This book is an enlarged edition of Leonhardt's Anleitung für die vereinfachte Tragerrostberechnung (Wilhelm Ernst & Sohn, Berlin, 1940). The added material includes the new exact method of "affinity load groups", 52 design tables, seven numerical examples, and descriptions of improved model tests—Reviewed by D. B. Steinman, consulting engineer, New York.

New Engineering Books

Theory of Flow and Fracture of Solids—By A. Nadai. 572 pp. McGraw-Hill Book Co., New York 18, and London. $1.00.

Theory of Modern Steel Structures—Abridged edition. By Linton E. Grinter. 424 pp. The MacMillian Co., New York 11. $6.50.

Statics and Strength of Materials—By Jasper O. Draffin and W. Leighton Collins. 398 pp. The Ronald Press Co., New York 10. $6.50.

Prologue to Tomorrow—A history of the first hundred years in the life of the Pennsylvania Salt Manufacturing Co.—By Robert Keith Leavitt. The Pennsylvania Salt Manufacturing Co., Phila., Pa.

Basic Building Code of the Building Officials Conference of America, Inc., 1950 Edition—Building Officials Conference of America, Inc., 51 E. 42nd St., New York 17. $5 paper; $6.50 cloth.

The Work of Oscar Niemeyer—Edited by Stamo Papadaki. 220 pp. Reinhold Pub. Corp., 330 W. 42nd St., New York 18. $9.00.

Contemporary Structure in Architecture—By Leonard Michaels. 229 pp. Reinhold Pub. Corp., 330 W. 42nd St., New York 18. $10.00.

Building Code of Cleveland—600 pp. Code Services, Inc., Cleveland 15, Ohio. $10.30.

Publications of the International Association for Bridge and Structural Engineering—Ninth Volume, 1949. Published by the General Secretariat, Zurich, Switzerland. (Some papers are in English, and there are brief summaries in English of the papers in French, German and Italian.)

Irrigation Principles and Practices—Second Edition. By Orsen W. Israelsen. 405 pp. John Wiley & Sons, New York 16; Chapman & Hall, London. $6.00

House Construction Costs—By G. Underwood. 314 pp. McGraw-Hill Book Co., New York 18, Toronto, London $4.50.

(Continued on page 52)

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READER COMMENT

Low stresses are wasteful

Sir: I have noted with interest your two recent editorials (ENR April 13, p 21, and Oct. 12, p 23) covering methods by which engineers might save steel.

Your suggestion that welded structures are one manner in which steel can be saved is on firm ground. It is borne out by our experience in the construction of several hundred welded structures. Not a single one of these failed to save steel. Many have saved over 10% of normal tonnage, as illustrated by a description in the Engineering News-Record of the Baltimore Sun Building (Mar. 9, p 31).

There is another way, however, by which we can save steel. For many of the lighter type of steel frame buildings, there appears to be no reasonable grounds for not increasing unit tension stress in steel from the present generally used figure of 20,000 psi to 24,000 or 25,000, as was done during the World War II period.

I make this suggestion as a result of having watched for any bad effects in the structures of buildings our office designed during that period. So far as working capacity of these buildings is concerned, I can see no difference between them and the ones designed for the lower stress.

There are many so-called safety factors involved in present-day design methods, which make us as a nation wasteful of one of our most reliable materials. I cannot understand why we should continue to penalize ourselves, when it is customary in many other countries to use higher unit stress than we do, and they do this with steel no better than the steel we use.

If airplanes can be designed to use materials up to the elastic limit, why should structural designers continue to use the present-day stress of 20,000 psi?

Van Rensselaer P. Saxe
Engineer
Baltimore, Md.

Profession or Trade?

Sir: The article "Engineering-Profession or Trade" in ENR Sept. 14 indicates that engineers should definitely promote recognition of engineering as a *Profession* before the legal machinery of a paternalistic administration forces unqualified classification as a "trade."

The quoted interpretations of the Supreme Court embrace the practice of medicine within the scope of the Sherman Act as a "trade"; in my opinion this places the physician in the same general category as a drug store clerk. If this view is acceptable, the learned jurists who so decide are members of a "trade", for the broad use of the term "trade" includes lawyers as well as doctors and engineers, as it is said to include "all occupations in which men are engaged for a livelihood" (Justice Groner.)

This law (or its interpretation) is lax in its failure to make a definite distinction between barter and sale of routine manual skill or of merchandise as a "trade"—and the sale of skilled personal service solving special problems contributing to the welfare of humanity as a "profession."

A mechanic such as a mason or carpenter sells routine manual skill in accordance with designs prepared by others. A business man sells merchandise, bound by no ethics other than his estimate of "what the traffic will bear." A doctor, lawyer, architect, or engineer, sells personal service with the element of profit subordinated to an accepted code of ethics. This personal service requires analysis of special problems and the exercise of judgment based on arduous study, training, and experience.

Even where "engineers" are merely trained technicians involved in some single phase of engineer's work, the exercise of judgment and the responsibility carried distinguish the work from a routine operation.

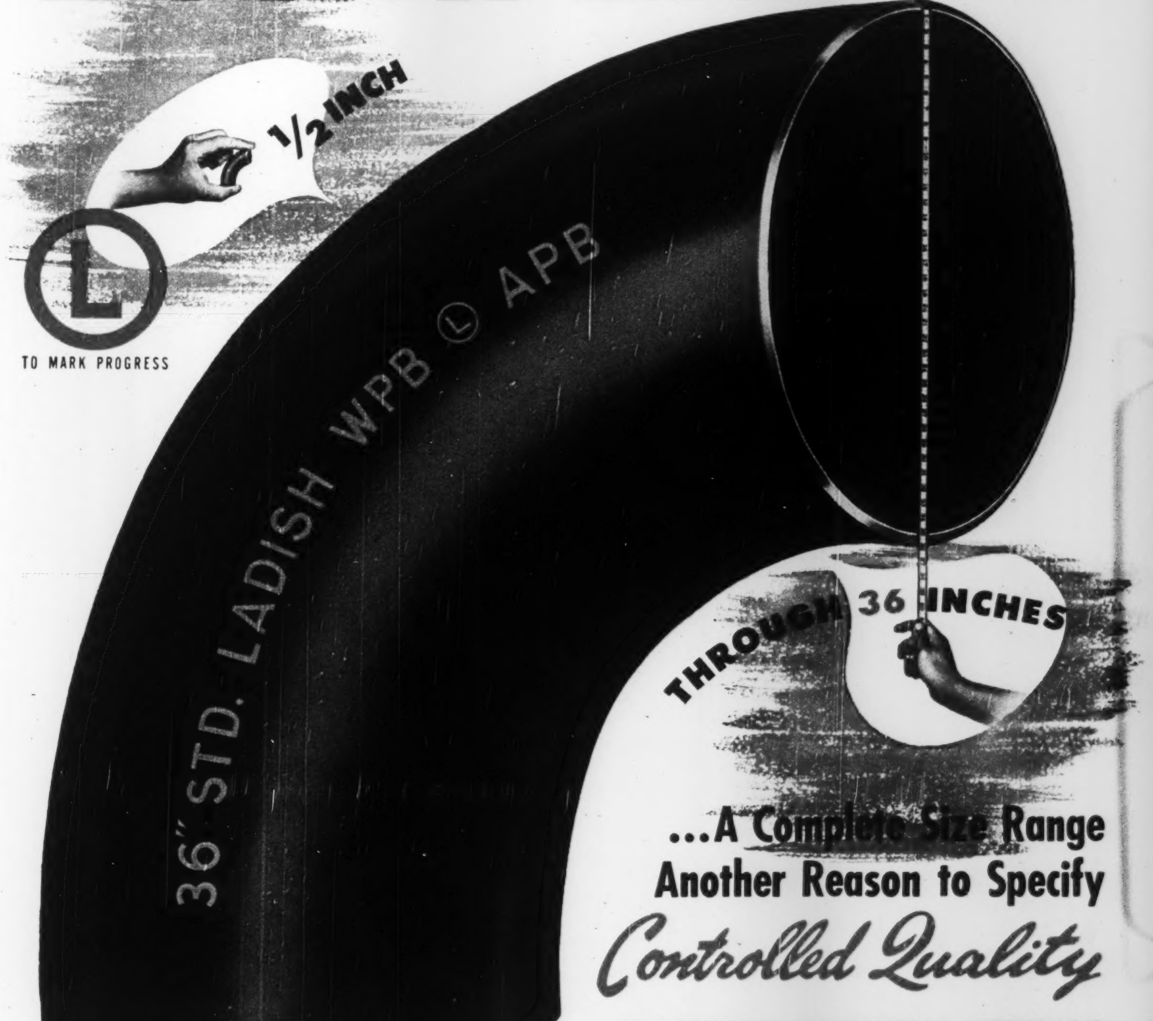
A set of properly prepared engineering plans and specifications, like a lawyer's brief or a doctor's diagnosis, is not to be confused with "merchandise." These are *instruments* of service and are tangible evidence of the principal's professional solution of a problem.

The charge that a recommendation without compulsion for a minimum scale of fees among members of a professional organization is illegal and in "restraint of trade" is fantastic indeed. Does not the legal profession (or "trade") have a minimum scale recommended? Do not labor unions have minimum wage scales frequently enforced, with loss and inconvenience to the general public?

There is something wrong with the application of the law to the professions involved. *Engineers through their organizations should refuse to accept any proposed legal classification of professional engineering as of no higher status than that of a trade.*

Eric Fleming
New Brunswick, N. J.

Ladish Elbows



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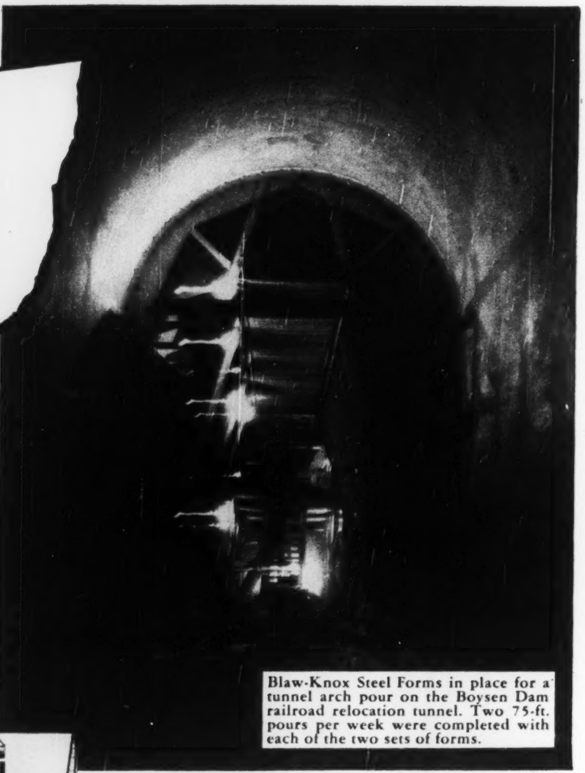
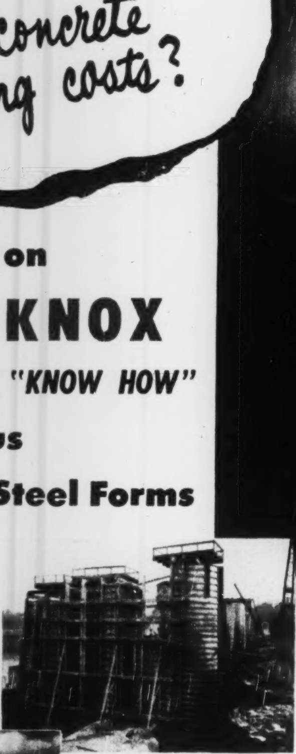
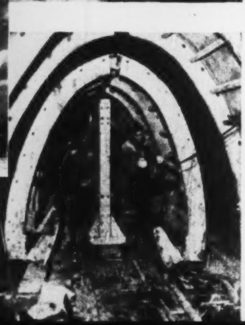


Blaw-Knox Steel Forms in place for a tunnel arch pour on the Boysen Dam railroad relocation tunnel. Two 75-ft. pours per week were completed with each of the two sets of forms.

Blaw-Knox Steel Forms handle a wide variety of jobs. Here Blaw-Knox Pier Forms are used during construction of the Emsworth Locks at Pittsburgh, Pa.





Above, Sewage disposal plant for Chicago's southwest side was constructed with Blaw-Knox Steel Forms.

At right, Blaw-Knox telescopic Steel Forms set to pour 96" sewer at Fort Wayne, Ind.

WHATEVER your concreting problems, you'll get the job done faster and well within your estimate when you combine the time saving efficiency of Blaw-Knox Steel Forms with the money-saving recommendations of Blaw-Knox engineering service. This consultation service is available to any contractor, from the blueprint stage to the final pour. Blaw-Knox engineers help you select the forms just right for the job, work with you in planning for simplified forming methods that often reduce the number of operations necessary, speed the job, and keep costs at minimum levels. The experience gained over 40 years by the original and most prominent manufacturer of Steel Forms for heavy construction is at your service. Write today for advice and information on your concreting problems. Ask for Bulletin 2035.

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SMALL? or LARGE?

BLAW-KNOX

BLAW-KNOX DIVISION OF BLAW-KNOX CO., Farmers Bank Bldg., Pittsburgh 22, Pa.
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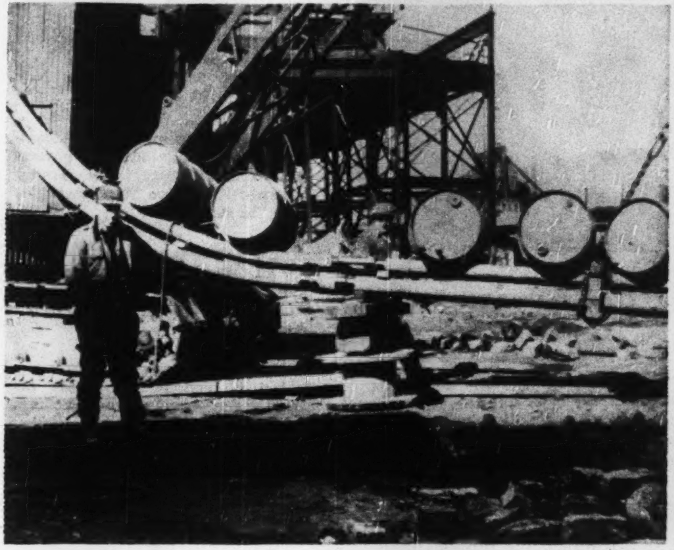
FIELD AND OFFICE

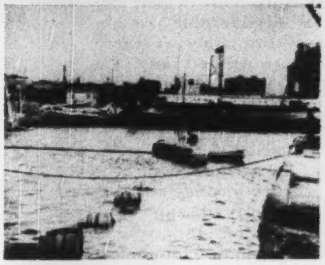


Underwater conduit pipe is floated into position

Engineers literally launched wrought iron conduit pipe into position underwater at the Vernon Avenue Bridge construction project over Newtown Creek in Brooklyn, New York.

They turned to techniques used in laying cross-ocean cables to float the pipes into position. Empty, sealed oil drums were bound to the conduits to provide buoyancy so that the conduits would not plunge to the bottom before they were moved into final position. Once the improvised buoys were attached, a crawler crane carried the conduit to the water. Then, a barge-borne crane eased the conduit line across the water span.

The water-crossing made, the shore end of the conduit line was submerged and threaded through an underwater opening in the caisson.



OIL DRUMS, emptied and then sealed, serve as buoys to hold conduit until it is moved into final position.

Both design and construction of this bridge are under the supervision of Frederick H. Zurmuhlen, Commissioner, New York City Department of Public Works.

Gas ejectors save money on U. S. hydraulic dredges

A gas ejector system for pumps on hydraulic dredges saved more than $4,000,000 for the Corps of Engineers during fiscal 1950. Designed by Richard T. Hoffman, a civilian engineer in the New York District office, the ejector system eliminates "plugging" and loss of efficiency when dredges are excavating materials containing entrained gases.

On its first trial, Hoffman's improvement showed a 50 percent reduction in pumping time and a 5 percent increase in cubic yards dredged. The Corps of Engineers thereupon equipped fifteen hydraulic dredges with the gas ejector system. In one year after installation, the improved pumps produced estimated savings of $4,439,000.

Efficiency of the new system allows the dredges to operate in places where their use was formerly considered uneconomical. Private dredging contractors are adopting the system, and inquiries regarding it are coming in from abroad.

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(Continued from page 47)

Reports and Pamphlets

The Wellpoint System in Principle and Practice—103 pp. Griffin Wellpoint Corp., 881 E. 141st St., New York 54. $1.50.

A.S.T.M. Standards on Cement—Specifications, chemical analysis, physical tests—American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. $2.00.

Highway Engineering—A Challenge and an Opportunity—Technical Bulletin No. 167, 1949. American Road Builders' Assoc., 1319 F St., N.W., Washington 4, D. C.

The Portland Cement Industry—By Hubert C. Persons. No. 18 in the series of American Industries. Bellman Pub. Co., Inc., 83 Newbury St., Boston 16. $1.00.

Transit Fact Book—Prepared by American Transit Assoc., 292 Madison Ave., New York 17.

Curing of Concrete—Technical Bulletin No. 165, 1949, American Road Builders' Assoc., 1319 F St., N.W., Washington 4, D. C.

Tractors and Their Mounted Equipment—Technical Bulletin No. 166, 1950, American Road Builders' Assoc., 1319 F St., N.W. Bldg., Washington 4, D. C.

Concrete Mixers and Pavers—Technical Bulletin No. 168, 1950, American Road Builders' Assoc., 1319 F St., N.W., Washington 4, D. C.

Flood of June 1949 in Stokesville-Bridgewater Area—By Orville D. Mussey. Bulletin No. 10. Dept. of Conservation and Development, Commonwealth of Virginia, Charlottesville, Va.

Lectures on Foundation Engineering—By A. E. Cummings. University of Illinois Bulletin No. 35. Engineering Experiment Station, Urbana, Ill. $1.00.

Water Levels and Artesian Pressure in Observation Wells in the United States in 1946. Part 2. Southeastern States—Geological Survey Water-Supply Paper 1072. Supt. of Documents, U. S. Government Printing Office, Washington 25, D. C. 75c (paper cover).

Wells and Water Levels in Principal Ground-Water Basins in Santa Barbara County, California—Geological Survey Water-Supply Paper 1068. Supt. of Documents, U. S. Government Printing Office, Washington 25, D. C.

K&M *"Century"* ASBESTOS CORRUGATED WALLS

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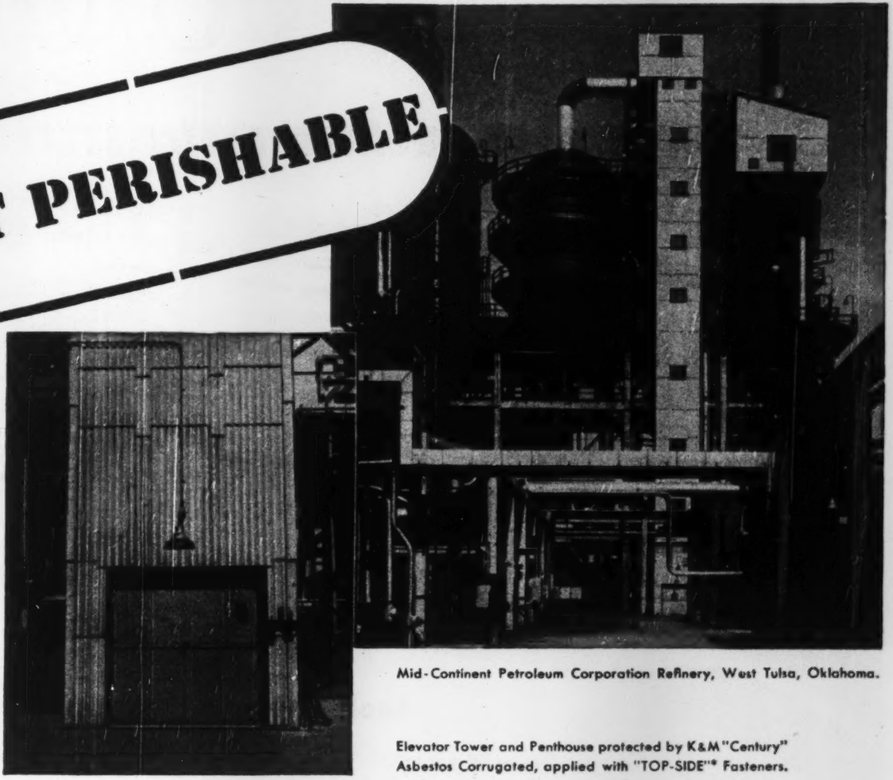

Mid-Continent Petroleum Corporation Refinery, West Tulsa, Oklahoma.

Elevator Tower and Penthouse protected by K&M "Century" Asbestos Corrugated, applied with "TOP-SIDE"* Fasteners.

Industrial and commercial building walls need a rugged constitution. That's exactly why K&M "Century" Asbestos Corrugated walls are bound to be an economy for you. They provide all the structural strength and staying power of the proved K&M Asbestos-Cement combination. They shed extremes of weather and other atmospheric threats, without even needing paint. They defy fire, rust, rot, rodents and termites. You can plainly add it all up to long-term freedom from maintenance.

Initial savings are just as plain, for K&M "Century" Asbestos Corrugated goes up fast, no special work needed. Fitting is easy with ordinary cutting and drilling tools. Even scaffolds and extra labor can be eliminated by using "TOP-SIDE"* fasteners. They're made so that K&M Corrugated can be anchored to steel members of any type, on sides or roofs. You'll have protective enclosure—and cost figures—that keep on looking good.

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A NEW HEAT-TREATED ALLOY STEEL WITH

MECHANICAL PROPERTIES—U·S·S Carilloy T-1 Steel can be furnished Heat Treated to the following mechanical properties:

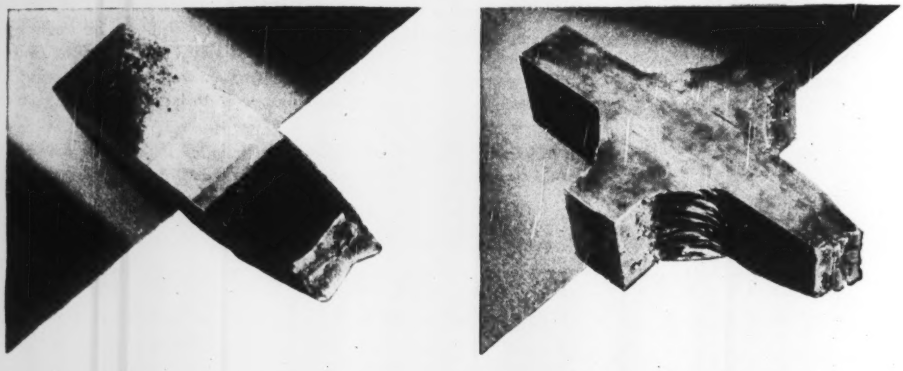
	Thickness ¼" to 2" incl.	Thickness Over 2" to 4" incl.	Thickness Over 4" to 6" incl.
Yield Strength, 2% Offset (min.)	100,000 psi	90,000 psi	90,000 psi
Tensile Strength (min.)	115,000 psi	105,000 psi	105,000 psi
Elongation in 2", % (min.)	18	17	16
Reduction of Area, % (min.)	55	50	45
	Thickness ¼" to ½" incl.	Thickness Over ½" to 1" incl.	Thickness Over 1" to 2" incl.
Cold Bend	180°D=1t	180°D=2t	180°D=3t

(Testing in accord with A.S.T.M. recommended practices.)

Look at these test results:

◀ **90° at 98 below!** The sample here was flame-cut from 1" plate. Then it was chilled to −98°F, and bent to a full 90° angle. Even though the raw, flame-cut edge made up the outer radius of the bend, there was no sign of failure!

▼ **100% WELD STRENGTH**—Tensile tests on welded specimens like these prove that welds on CARILLOY T-STEEL are 100% efficient. Welds develop the *full* strength of the parent metal. Note that breaks occur outside the heat-affected zone. No special pre-heating or post-heating treatments are required beyond those used with ordinary structural steels.



Carilloy T-steel

THIS REMARKABLE **COMBINATION** OF PROPERTIES

1. *High yield strength of 100,000 psi minimum.*

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3. *Readily weldable - - without loss of strength or ductility.*

HERE is a new alloy steel developed especially for heavy-duty equipment that must withstand a lot of abuse in all sorts of climates — in the scorching heat of summer and the bitter cold of winter — yet with all this, it's a steel that can be easily gas-cut and readily welded.

U·S·S CARILLOY T-STEEL was developed by Carnegie-Illinois research. It provides a unique combination of superior strength and unusual ductility. This low carbon *alloy* steel can actually be welded and gas-cut as readily as structural *carbon* steel.

Plates of CARILLOY T-STEEL from ¼" up to 2" in thickness have a minimum yield strength of 100,000 psi even *after* welding and gas-cutting. Despite this very high strength, T-Steel will remain tough and ductile at any climatic temperature. That's why CARILLOY T-STEEL is made to order for heavy-duty equipment that must operate out-in-the-open under high impact loads and without danger of failure.

The *full* strength of CARILLOY T-STEEL can be utilized in designing welded construction because the high physical properties are not affected by welding or gas-cutting.

U·S·S CARILLOY T-STEEL has been developed for use in the form of plates and bars. Its nominal hardness is 250 Brinell. For abrasive conditions, where high hardness *and* toughness and weldability are essential, hardness up to 320 Brinell minimum can be furnished.

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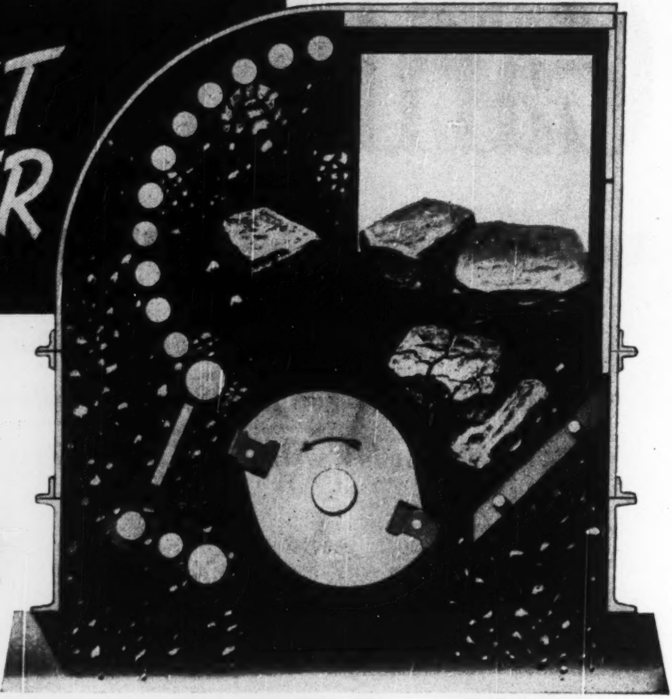
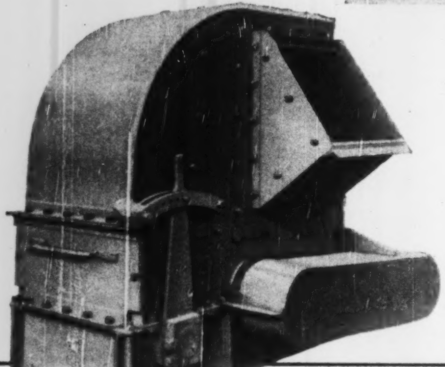
The ROCK BUSTER





Cross-section view tells the story. This NEW Jeffrey Impact Crusher reduces material while in suspension by means of high-speed, 2-ton Rotor, perfectly balanced. Full width stationary and reversible Hammers of heavy cast Manganese steel. Capacity from 60 to 250 tons per hour.

Material fed into side (see photo left) onto a sloping grizzly of desired spacing, which by-passes fines and directs over-size into path of rotor. Cubicle product ranging from 1" to 4" in one pass. Finer sizing possible. Breaker bars adjustable. 30" x 30" opening only restriction to size of feed.

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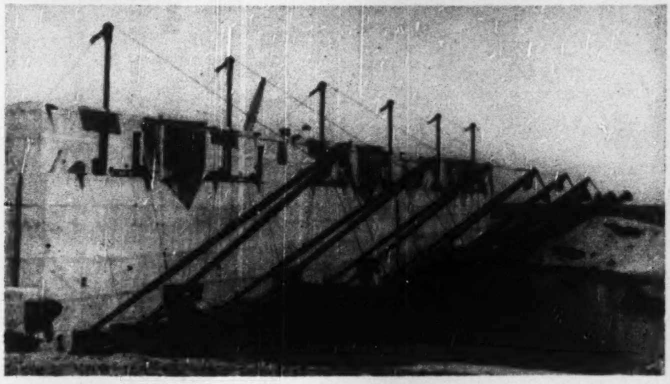
DEVELOPMENTS ABROAD



THE FIXED DREDGE AT WORK catching sand that otherwise would pass into the harbor of Salinas Cruz.

An unusual fixed dredge to keep Mexican port open

To keep open the important new Pacific port of Salinas Cruz, the Mexican Port Authority (Junta Directiva de Puertos Libres Mexicanos) has built and placed in operation a $2,000,000 fixed dredge of radical design.

The dredge, mechanical design of which was done by the Dutch firm of Werf Conrad, consists of six winch-controlled intake tubes of 18 in. dia, hooked to suction pumps.

The theory is that the fixed dredge, built on concrete blocks at the north mouth of the harbor, will catch the sand that otherwise is carried into the harbor. This flow of sand will be channeled through a 7,220-ft long pipeline to the coastal area below the harbor where it will be placed again in the normal north south flow along the coast.

The Salinas Cruz harbor is of increasing importance as a new transisthmian pipeline has its Pacific outoutlet there. Mexican oil, found on the Atlantic coast, thus will be piped to the Salinas Cruz port where it can be loaded on tankers for distribution to all Pacific points.

It is hoped to move sand from the north mouth to the south edge of the harbor at a cost of two cents per cubic meter. Cost of the normal floating dredge is said to be 22 to 33 cents per cubic meter.

Once the fixed dredge goes into regular operation—it is now being tested—in order to accommodate heavy shipping, it will still be necessary to remove two or three million cubic meters of sand that have accumulated in the harbor itself out of reach of the fixed dredge.

This would be done with a floating dredge, after which the theory is the fixed dredge will never permit further sands to drift into the harbor.

Mexico procured the machinery for the project from Holland by bartering Mexican sugar for it.

Transarabia pipeline is completed

The final section of the Transarabian pipeline from the Persian Gulf 753 miles to the Mediterranean Port of Sidon, on the Lebanon Coast, has been completed, according to the Arabian American Oil Co. While construction on pump stations and related projects remains to be completed, it is believed that the carrier will be ready in December.

Crude oil deliveries are expected to be at a rate of about 300,000 bbl. daily, or at the line's initial capacity.

The Trans-Arabian Pipe Line Co. owns the line, which joins with 315 miles of pipeline on the eastern end. The latter consists of a crude oil gathering system belonging to Arabian American Oil Co.

Linking of the huge Arabian oil fields with the port of Sidon through 1,068 miles of pipeline will eliminate some 3,300 miles in tanker transportation around the Arabian peninsula. It is estimated that the carrier will free 60 to 80 tankers for the world market.

Construction of the pipeline project was started at the end of 1947. Laying of the pipe was undertaken simultaneously from both the eastern and western ends, with the final weld between the two sections in northeastern

(*Continued on page 59*)

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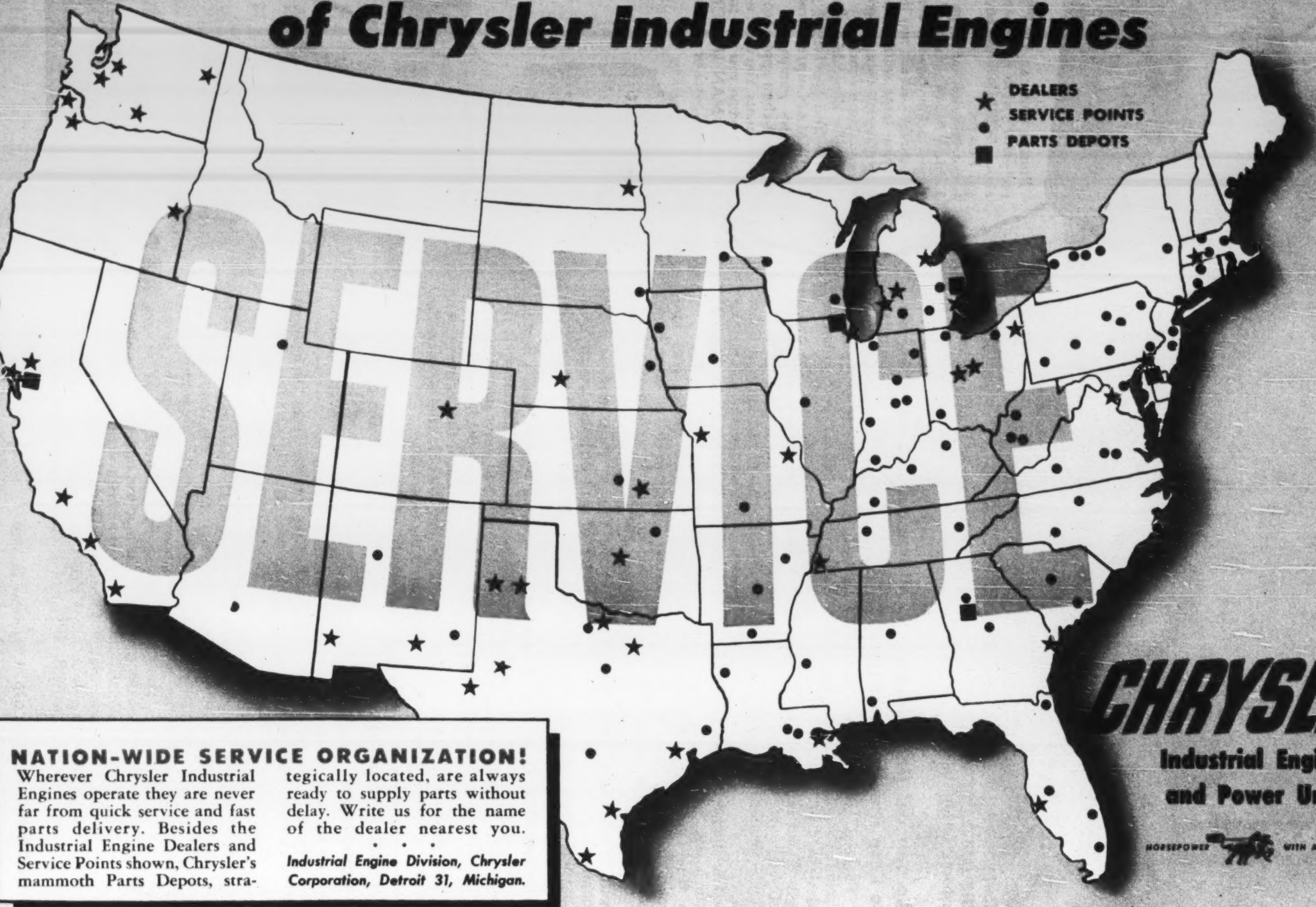

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Industrial Engine Division, Chrysler Corporation, Detroit 31, Michigan.

CHRYSLER

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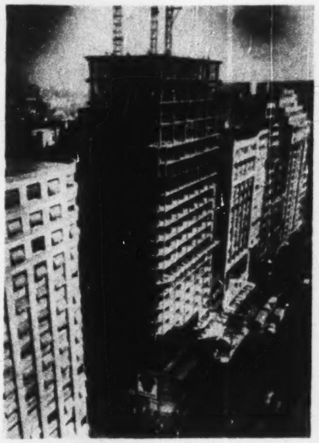
HORSEPOWER WITH A PEDIGREE

Arabia just completed. The line consists of a 30 to 31-in. pipe, weighing 264,960 tons.

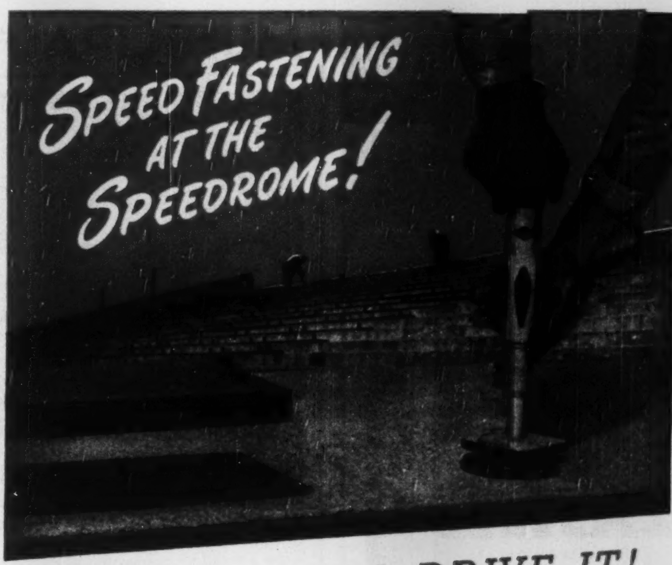
◆

Engineering exhibition—Several U. S. exhibits are being arranged for the engineering exhibition to be held in connection with the international power and irrigation conferences in New Delhi, India, next January (ENR Nov. 2, 1950, p. 51). U. S. exhibits will be sent by the Tennessee Valley Authority, the Department of the Interior and the Corps of Engineers. It is also reported that some private companies are arranging for exhibits through their Indian representatives.

The exhibit will continue from Jan. 10 to Feb. 10, 1951. Facilities are available for showing actual construction equipment as well as models, charts, films. Information is available from the Secretary, Central Board of Irrigation, Curzon Road Barracks, New Delhi, India, or from the Indian Consulate, 3 E. 64th St., New York 21, N. Y.



ENGINEERING CLUB BUILDING—The Engineering Club of Brazil is building an impressive headquarters on Avenida Rio Branco, Rio de Janeiro's main business street. When completed late next year it will represent an investment of $5,000,000. The club itself will occupy the top five floors of the reinforced concrete building. The design of the building was open to competition and 24 firms offered drawings. Jacques Pilon was the winner. His design uses the usual Brazilian system of interior reinforced concrete columns supporting concrete slab floors. The tapered columns, 32 in. in diameter at the base, are spiral reinforced. Exterior walls will be of an aluminum module consisting of three louvers each above and below a double sliding glass window.



They Did It With DRIVE-IT!

● Here's another typical money-saving fastening triumph for DRIVE-IT—fastening seat brackets at the Grand Rapids Speedrome.

Wherever steel or wood must be fastened to concrete, steel or other hard materials there's a spot for DRIVE-IT to save you money. Reports of 75% to 85% savings over old-fashioned methods are common. With Drive-It, a drive-pin plus a power charge does the job in a split-second—and *better* than the old "dig and drill" method.

We can't begin to tell you the whole story here, but do yourself a favor and send us the coupon below. It will be money in *your pocket!*

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DRIVE-IT "238"

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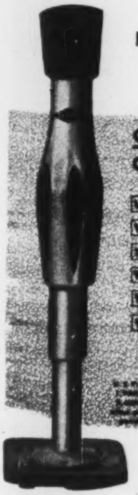

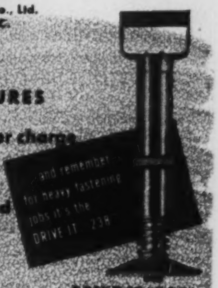

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MUNICIPAL AFFAIRS

THOUSANDS OF PEOPLE in the United States are older than Oklahoma City. On its very first day—April 22, 1889—its population grew from nothing to 10,000 in seven or eight hours. The community was peopled by men and women who made the "run" when a broad central section of what formerly was the Indian Territory and is now the State of Oklahoma was thrown open to settlement by presidential proclamation. That fast start was a portent of the city's continued rapid growth. Today its population is 242,450.

Building permits in Oklahoma City this year to reach $50 million

Last spring the people of Oklahoma City, Okla., went to the polls and voted a $35 million bond issue. For the most part, this money will go for new building construction and the building of roads and sewer and water lines.

With almost $40 million in building permits already issued this year to date, a year-end figure of $50 million is confidently expected, or more than double the record of $24 million set in 1929.

Everywhere in this thriving city new construction is in evidence. Excavating is now under way for an $8 million VA hospital to contain 500 beds. Recently dedicated and placed into operation is one of the Southwest's largest electrical generating plants—that of the Oklahoma Gas and Electric Company's 112,000-kw station. In the construction of this plant of reinforced concrete 20,000 yd of earth were excavated and 90,000 tons of materials and equipment were moved onto the site.

Coincident with industrial and commercial expansion in Oklahoma's capital city, there is a great boom in residential construction—both individual dwellings and apartments.

Parking relief promised for San Francisco

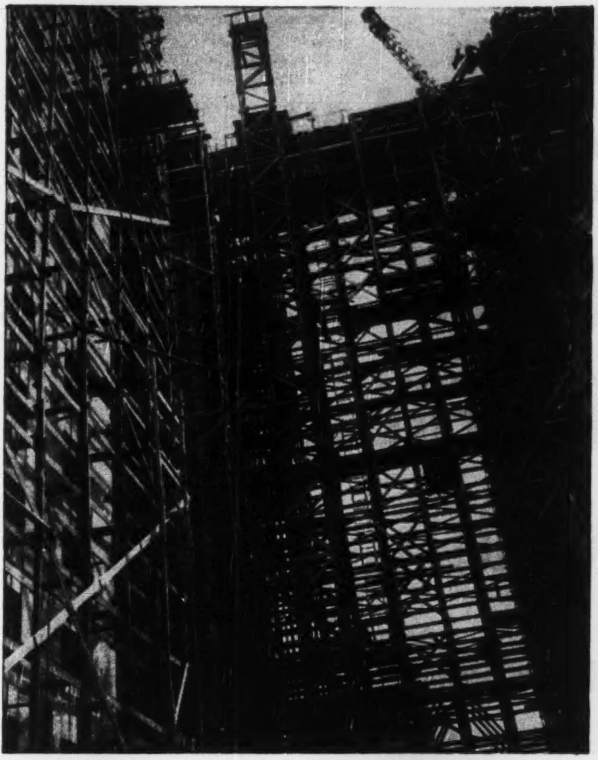
New parking space in downtown San Francisco is promised with the announcement of a bid call next month for a 700-car underground garage below St. Mary's Square and of plant for construction of a 500-car garage building in Lick Place.

The San Francisco Parking Authority expects the three-story underground garage will cost about $1,500,000 and hopes construction will start next spring. Barrett Garages, which will build the Lick structure, plans to invest about $700,000 in a four-story building. Demolition of the present building will begin in the spring.

Half a dozen firms have expressed interest in bidding on the St. Mary's garage. The group of investors which built the Union Square underground garage would like to take on the project, but estimated the job would cost $1,800,000 under present conditions. It suggests using $1,200,000 of private capital plus $600,000 of city funds from a $5,000,000 parking bond issue voted in 1947. Under this plan, the garage would revert to city ownership within 35 years, or sooner if revenues retired the private debt before then.

Others who have indicated interest in handling the project entirely with

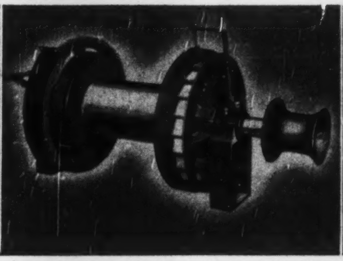
(*Continued on page 62*)



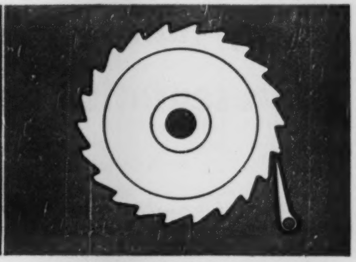
A yard a minute!

Here's how Nettleton-Baldwin-Anderson Inc. did a big job fast at Seattle. In building the Nettleton Apartments, they used this 160-foot tower, and a Model 75, 2 Drum American General Purpose Hoist. Day after day, the concrete bucket made one full round trip a minute, while the second drum was hoisting steel and lumber. Pouring at speeds up to 62 yards per hour, the hoist raised 13,500 yards of concrete for the job. Top speed, ease of operation, and lowest cost load lifting have made American General Purpose Hoists the fastest-selling line of construction hoists. Models from 2500 to 10,000 lbs. single line pull—5 to 100 horsepower. Gasoline, diesel or electric power. Send for new hoist catalog today.

HE'S RELAXED! Even making 160 ft. lifts at top speed, operator finds American Hoist takes minimum effort. Comfortable seat, grouped controls help avoid fatigue.



BALANCED DRUMS. Note that clutch and brake are at opposite ends of shafts. Bearing load is equalized; entire hoist runs cooler; upkeep problems vanish!



COMPRESSION TYPE DOG is an outstanding feature to experienced, safety-conscious operators. It's never under tension; can't bend, or slip out of ratchet.

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& DERRICK COMPANY

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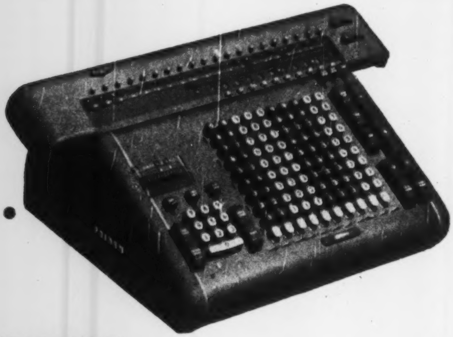

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private funds include the Equitable Life Insurance Company, Cahill Brothers Construction Co., Barrett Garages, and Metropolitan Garages, Inc.

New Orleans plans a 6-lane boulevard

An improvement plan to give New Orleans, La., a 6-lane, landscaped "white way" boulevard has been agreed upon for Tulane Avenue, main entrance into the city from the Air-Line highway.

Vehicular roadways will be widened from 27 to 32 ft to make Tulane Avenue 6-lane from Carrollton to the Saratoga Expressway. This will leave a 16½-ft neutral zone which is to be beautified with palms, azaleas, grass and plants. Street cars in the special lanes are to be replaced by trolley buses. The passenger hazard will be eliminated by buses stopping at the curb.

Mayor deLesseps S. Morrison said that the plan would necessitate the redesign of the $800,000 underpass for So. Carrollton and the New Basin canal and would delay the asking of bids by about six weeks. However, he said that the cost of redesigning would be about $10,000 but that economies will reduce the original cost of the project from $800,000 to about $650,000.

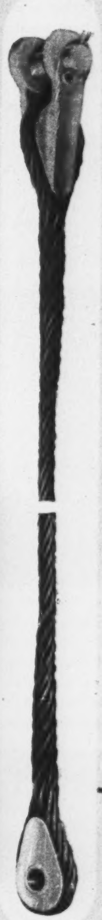
BACK TO COBBLES—While other cities cover up or rip out their cobblestone streets, historic Williamsburg, Va., puts down more. Workmen are shown setting cobblestones on a section of Francis Street in the old city as part of work done in restoring the section to much of its 18th Century appearance in harmony with the rest of restored Williamsburg. The concrete pavement was removed, a new hard pavement resembling in color a dirt street was laid down and the entire length on the parking strips set with cobblestones. Old lamps, hitching rails and brick sidewalks complete the "Colonializing."—Wide World Photo

Put safety and reliability into your boom supports

with new Fatigue-Resistant

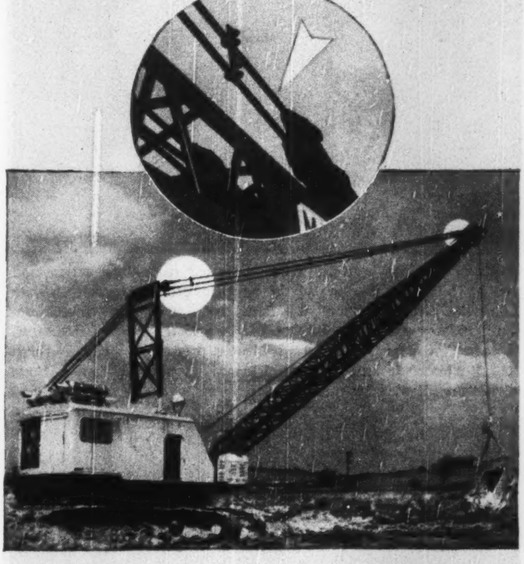
TIGER BRAND WIRE ROPE ASSEMBLIES

············▶ *An exclusive development of American Steel and Wire Company*



HERE'S THE TROUBLE SPOT

On old style boom supports, vibration was concentrated at the point where the wire rope entered the socket. For machines where vibration was *not* severe, this assembly was satisfactory. But for today's high-power, high-speed machines, *a boom support with much greater resistance to fatigue is absolutely necessary.*



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COLUMBIA STEEL COMPANY, SAN FRANCISCO
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SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

HOW THE TROUBLE WAS ELIMINATED

The New Fatigue-Resistant Tiger Brand Wire Rope Assemblies are an *innovation.* They effectively combat the most severe vibration on power shovels, draglines and cranes. Note carefully the novel end thimble interwoven into the pendant. Vibration is dampened over a long section instead of being concentrated at one point.

2 TO 3 TIMES LONGER LIFE

The new construction has been proved in actual operation to last two to three times longer than the old assemblies — and in some cases even better results were obtained.

INTERCHANGEABLE ON STANDARD EQUIPMENT

You can replace your old boom supports with these new assemblies quickly and easily because essential dimensions such as pin diameters, distance between ears, etc. are the same as for standard open and closed sockets. Send the coupon for complete information.

American Steel & Wire Company
Rockefeller Building, Dept. A-110
Cleveland 13, Ohio

Please send me complete information on your new Tiger Brand Boom Support Assemblies.

Name..........

Title..........

Company..........

Address..........

City.......... State..........

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AMERICAN TIGER BRAND WIRE ROPE

Excellay Preformed

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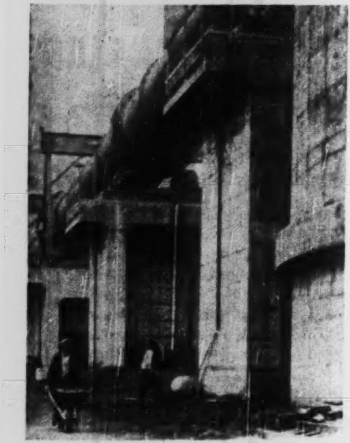
RENT

these cost-reducing forms for concrete



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Use this nationwide Form Rental and Engineering Service that saves costly Labor — Material — Time when placing concrete for

- **Foundations, Walls**
- **Water or Sewage Treatment Plants**
- **Tanks—Circular and Rectangular**
- **Bridges, Culverts and Box Tunnels**

Standard units of Economy Forms are adaptable to a wide range of jobs. But where needed, special forms can be fabricated to specification.

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MEN AND JOBS

The appointment of **H. A. Parker,** long-time Bureau of Reclamation construction engineer, as acting district manager of the million-acre Columbia Basin Project in eastern Washington, has been announced by Regional Director H. T. Nelson. Parker will replace Frank A. Banks, construction engineer, who is voluntarily retiring. As supervising engineer of the project, Parker has been in charge of the construction of the irrigation works below the South Dam, near Coulee City. Parker will retain his office at Ephrata, Wash., to which place will be transferred later the staff of the district manager's office now stationed at Coulee Dam.

Joseph A. Fisher, vice-president, freight traffic of the Reading Railroad, has been elected executive vice-president and a director. He is a civil engineer graduate of Lehigh University and has been with the Reading for 29 years. **E. Paul Gangewere,** assistant vice-president, has been elected vice-president. He is likewise an engineering graduate of Lehigh.

Joe S. Flythe, who has been connected with the city engineering staff at Rocky Mount, N. C., since 1947, has been named acting director of city utilities, succeeding **K. T. Knight,** who has resigned to become associated with W. C. Olsen, Raleigh, N. C.

Lieut. Col. Alfred J. D'Arezzo has been appointed executive officer for the district office of the Corps of Engineers at Seattle, Wash., to succeed **Lieut. Col. P. H. Symbol,** who has

(*Continued on page 68*)

Leading highway officials of the Southeastern States discussed road construction and administration problems at the recent meeting of the Southeastern Association of State Highway officials at Louisville, Ky. At the annual banquet are, left to right: Ray Cavendish of Charleston, state road commissioner of West Virginia; D. H. Bray of Frankfort, Ky., Kentucky state highway engineer and the newly-elected president of the Southern Association, and S. T. Roebuck, Jackson, Miss., chairman of the Mississippi State Highway Commission, the president.

John O'Brien, field representative for Architects Harrison & Abramovitz, inspects the 12-ft high, stainless-steel wall units (spandrel plus window frame) for the 41-story 525 William Penn Place office building in Pittsburgh. Floors of cellular steel decking, installed behind steel-erection derricks, made early materials storage possible.

Easy street . . .

● Easy to build, easy to maintain, easy to travel . . . these are the benefits for road-builder and for road-traveller when Main Street or highway is resurfaced with asphalt.

EASY TO BUILD—Easier laying of asphalt, use of faster equipment, rapid setting of asphalt paving . . . all of these help to speed road construction and to keep man-hours at a minimum. Aggregate that is already on the road or close at hand can be used to make the job still easier and to hold material expenses at a rock-bottom low.

EASY TO MAINTAIN—Asphalt and aggregate, mixed, make strong and durable road foundations. Top courses of asphalt, stone, and sand present long-wearing, waterproof surfaces. Maintenance, when necessary, takes a minimum of time, labor, and materials.

EASY TO TRAVEL—The unbroken, black surfaces of asphalt provide smooth-riding travel for users. The absence of road glare makes driving easier and safer.

A Standard Oil Asphalt Department Representative can suggest economical types of asphalt construction to meet your needs and local conditions. You are assured prompt delivery of Standard Oil Asphalt from any of five large refineries located throughout the Midwest. Write Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

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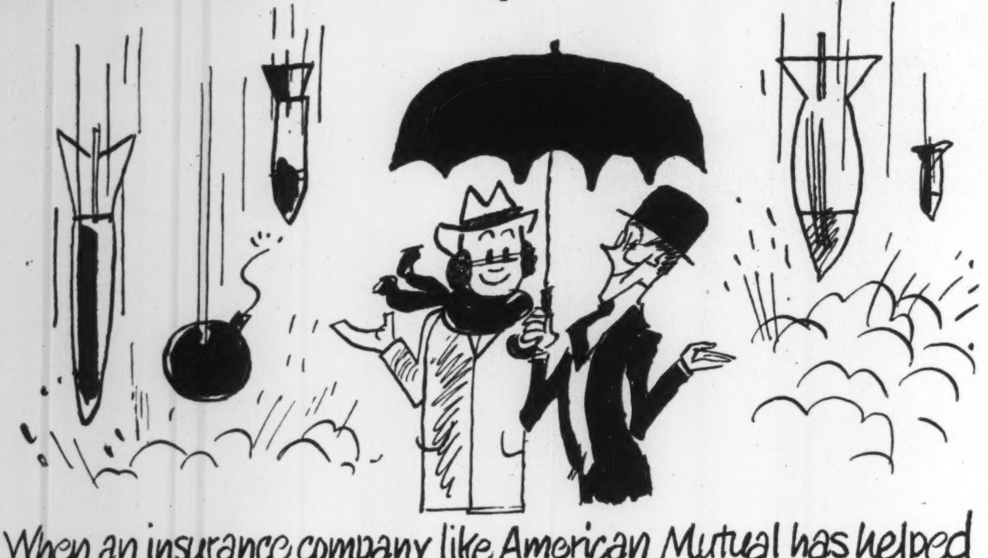
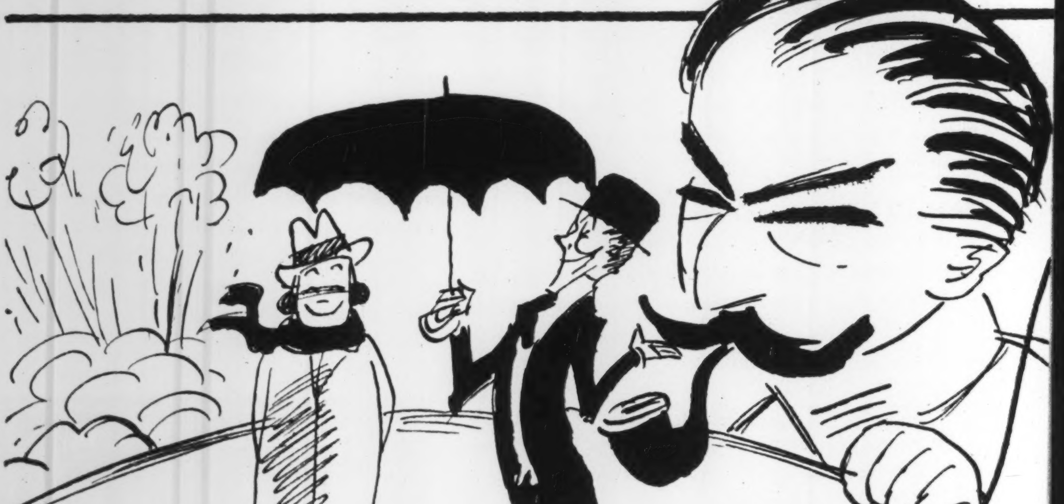
ASPHALT

STANDARD OIL COMPANY (INDIANA) STANDARD

There's a heap of weather



When an insurance company like American Mutual has helped American Businessmen weather more wars...



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in 63 years! BY MR. FRIENDLY

more depressions, more Bear and Bull markets
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TO HELP YOU IN THE UNCERTAIN DAYS AHEAD!

With higher taxes, growing inflation and hot and cold running wars... it's more important than ever to get the benefits of *the longest experience of any liability insurance company in America.* Today American Mutual's 77 offices stand ready to give you service and savings based on know-how, second to none! Why not join the more than 3 million families and 20,000 industrial concerns who are now protected by America's first liability insurance company? See your local Mr. Friendly today. Consult classified telephone directory.

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Without obligation, please *rush* to me information on *The All-American Plan* so that I may be richer and happier!

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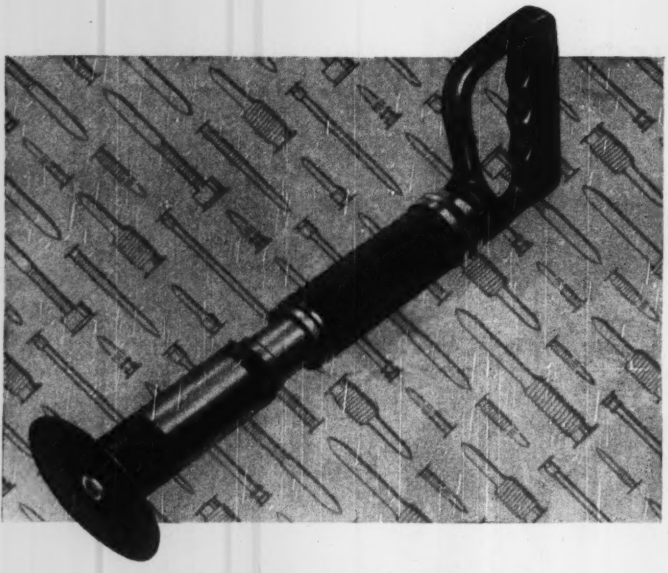

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FASTENING SYSTEM

Only RAMSET DUAL-ACTION TOOL gives you a cushioned, fist-grip handle for fast, sure, easy ***turn*** action fastening into steel, concrete, other building materials. In addition, the DUAL-ACTION TOOL offers ***tap*** action fastening—exclusive *dual choice* of method to suit the work best.

Neoprene handles, easy on the hands, are quickly interchanged. Varying powder charges insure correct penetration with no extra mechanical devices. Widest variety of steel drive pins and studs for practically any job. Strong, precision-built RAMSET TOOL offers unmatched power, flexibility, safety and durability . . . gets work finished on time, at amazing low cost.

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**TAP IT . . .
or TURN IT**

Ramset Fastening System

Pioneer in powder-actuated fastening

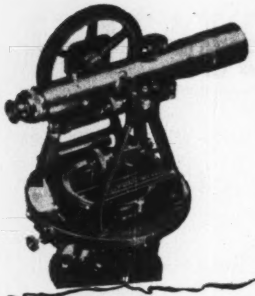
been transferred to the Engineers' Research & Development Laboratory at Fort Belvoir, Va. Col. D'Arezzo, a West Point graduate of 1938, has been a West Point instructor since attending the Command & General Staff School at Fort Leavenworth, Kan., in 1946. He holds a master's degree in civil engineering from Texas A. & M.

Wilbur S. Hanna of Billings, Mont., civil engineer with the U. S. Indian service, has retired after 45 years. He will continue as a member of the engineering committee of the Yellowstone River Compact Commission, which is gathering engineering data for use in drawing up a water compact among the states of Montana, Wyoming and North Dakota. Hanna obtained a degree in civil engineering at Purdue University in 1904. He entered federal service in 1905, with the Reclamation Bureau at Washington, D. C., and joined the Indian service in 1908. He pioneered irrigation work on Indian reservations throughout the northwest, and was supervising engineer for all Indian irrigation projects between the Great Lakes and the Pacific for several years.

William Shapiro has joined the staff of Ramseyer & Miller, Inc. of 11 W. 42nd St., N. Y. City, as project engineer, on the design of industrial structures particularly in the iron and steel industry. He had previously been with H. A. Brossert & Co. in charge of structural design and with Ebasco Services Inc. on power plant designer. After graduating from Cooper Union Institute of Technology in 1925 with a B.S. in C.E. degree, he spent many years in construction as field engineer and superintendent for various contractors and also several governmental agencies.

Robert A. Painter, who recently resigned as city engineer of Fredricksburg, Va., has become superintendent of maintenance and construction in the Fairfax County sanitary district where much waterworks and sewerage construction is under way. He is a graduate of Virginia Polytechnic Institute, and served with the U. S. Army Air Force in World War II.

Lt. Col. Edward G. Herb is to become district engineer at **Tulsa, Okla.,** according to Maj. Gen. Lewis A. Pick, Chief of Engineers. Colonel Herb has been on construction duty with troops in Okinawa since August, 1949. He succeeds Col. Edward G. Daly, district engineer at Tulsa since August, 1949. Colonel Daly recently reported to a troop assignment at Fort Campbell, Ky.



WHAT A LEADING TECHNICAL EDITOR WROTE ABOUT ALUMINUM TRANSITS AFTER ANALYZING HOW GURLEY MAKES THEM

Reproduced from a full-length article in the December 1949 issue of MATERIALS & METHODS, written by H. R. Clauser, its Associate Editor. We will gladly send you reprints of the entire article on request.

Aluminum Used Successfully in Precision Instruments

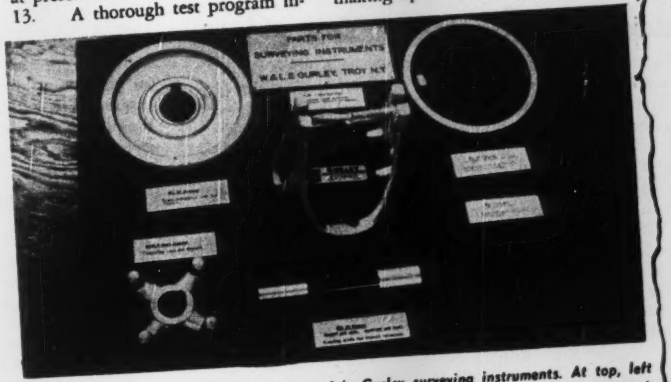
A PICTORIAL STORY

Requirements of accuracy during a long service life are controlling factors in selection of materials for engineering and surveying instruments.

● IN THE MANUFACTURE of precision instruments, the selection and careful processing of materials is of prime importance. Accuracy as well as long service life with a minimum of adjustment and repair are the quality standards that must be met, and to meet them, astute materials engineering coupled with expert workmanship are required. Perhaps no better example of the combination of these two factors can be found than at W. & L. E. Gurley, Troy, N. Y., where precision instruments are produced not only for engineering and surveying, but also for other fields such as meteorology and aeronautics.

Copper alloys and aluminum alloys are the principal materials used in the company's surveying instruments. One of the earliest uses of aluminum in this country was in a Gurley transit 73 years ago. And since that early application, aluminum has proved satisfactory in an increasing number of instrument parts. The main reasons for adopting the use of aluminum were: (1) light weight; (2) relatively high strength and yield point; (3) lends itself to precision machining; (4) good ductility; (5) relatively good corrosion resistance, especially in sulfur atmospheres; and (6) does not distort nor "grow" with age. The aluminum alloys most used at present are 14SW, 61ST, 356 and 13. A thorough test program insures against any differences in accuracy within a temperature range of —80 F and +165 F.

The accompanying pictures illustrate a number of the steps involved in the production of various parts making up the transit.



1—Shown here are the aluminum parts used in Gurley surveying instruments. At top, left and right is a 14SW forging for a horizontal transit limb before and after being machined, anodized and dyed. In the center is a sand casting of 356 alloy for the truss standard. Lower row, left to right, is a transit leveling head sand casting of 13 alloy, a swaged and spun tubing for telescope focusing slide of 51ST alloy, and a graduated vertical circle made of 61ST aluminum sheet which has been anodized and dyed.

You're So Right, Mr. Editor—

The first Gurley Aluminum Transit, built in 1876, was finally retired after 50 years of active service—and then for sentimental reasons only. It met every field "requirement of accuracy during a long service life"—as every Gurley Transit continues to do all over the world.

W. & L. E. GURLEY, UNION PLAZA, TROY, NEW YORK

Surveying and Engineering Instruments, Hydraulic Engineering Instruments, Standard Precision Weights and Measures, Paper and Textile Testing Instruments, Reticle Making Facilities, Aeronautical Navigating Instruments, Meteorological Instruments

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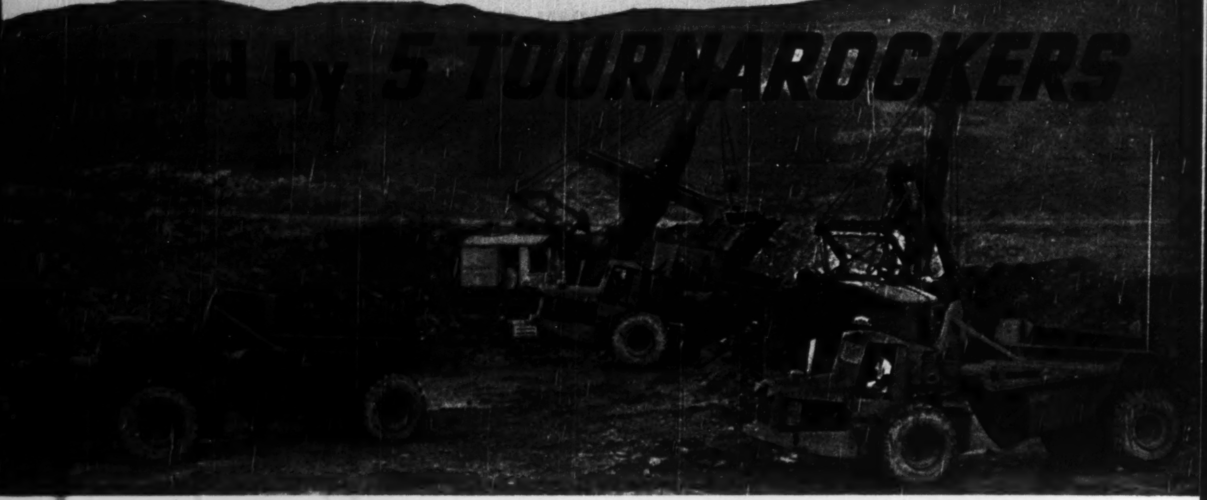


General Construction Co.

of Seattle, Washington, is excavating a 4,000,000-yd. intake channel for the powerhouse at Chief Joseph Dam, now being built across the Columbia River near Bridgeport. Project calls for digging approximately 2,500,000 cubic yds. of granite and rock and 1,500,000 yds. of silt-sand from a bend in the river . . . then using the material to relocate a riverside highway. Most of the heavy hauling is being handled by a LeTourneau fleet of 9 electric-control dirtmovers . . . including 5 rear-dump C Tournarockers and 4 C Tournapulls. Contractor's records show that on hauls ranging from 200 to 4000′ one-way, the 5 Tournarockers alone are averaging 812.5 yds. an hour . . . 6500 pay yds. of rock and sand per 8-hour working day.

2200′ cycle every 6 minutes

On a typical 2200′ cycle, for example, the 5 Tournarockers moved 640 pay yds. an hour. Two $2\frac{1}{2}$-yd. shovels loaded the LeTourneau rock wagons with mixed granite and pocketed sand in $2\frac{1}{4}$ to $2\frac{1}{2}$ minutes. Loads averaged 16 bank yards. Much of the haul was over narrow roads and up adverse grades . . . yet each Tournarocker completed a round trip every 6 minutes . . . delivered 8 loads an hour.

Fast cycles like these are possible because Tournarocker's short 90° turns and positive fingertip electric steer permit quick spotting both at shovel and at dump. Heavy-duty, multi-disc air brakes on all 4 wheels (4176 sq. in. total braking surface) give operators complete driving safety throughout the haul cycle. Holding action of powerful brakes . . . plus front-wheel drive on big tires of prime mover . . . let Tournarockers back up right to edge and dump safely over steep banks. Simple electric hoist tilts body to vertical position . . . streamlined bowl clears loads instantly.

Offer important savings for you

These same Tournarocker advantages which are helping General Construction Co. speed Chief Joseph Dam construction offer new low-hauling costs on your jobs, too. Your LeTourneau Distributor can give you all the facts about this 16-ton, rear-dump wagon . . . as well as complete information on 35-ton and 9-ton Tournarockers. Call him *TODAY!*

Tournapull—Trademark Reg. U.S. Pat. Off. Tournarocker—Trademark CT38b

LETOURNEAU PEORIA, ILLINOIS **TOURNAROCKERS**

HIGH SPEED on RUBBER PLUS TRACTION ADVANTAGES of a CRAWLER

EDUCATION and RESEARCH

ENROLLMENT OF FRESHMEN IN ENGINEERING SCHOOLS

Freshman Enrollment	1940	1947	1948	1949	1950
34 Institutions	16,407	27,124	22,735	19,189	14,057
Entire Country	33,175	57,507	47,672	36,508	26,500*
Former as % of Latter	49.5	47.2	47.7	52.4	53.0

* Estimated

Engineering school enrollment declines

Cornell's Dean Hollister predicts 12,400 maximum in graduates for 1954, compared to 50,000 this year

A decline in freshman engineering-school enrollment that is believed to threaten the supply of engineers in future years was reported at the annual meeting of the Engineers' Council for Professional Development by S. C. Hollister, dean of the college of engineering at Cornell University, and chairman of the ECPD Committee on Engineering Schools.

Dean Hollister made his check as of Oct. 1 at 34 institutions throughout the entire country where, during the past three years, enrollment was of the order of half that for the entire country. The results are summarized in the accompanying table. They show that the enrollment of freshmen is down to an estimated 26,500 for the whole country, a decline of 27% from last year and less than the prewar figure of 33,175 for 1940.

• **BLS report blamed**—The seriousness of this situation, said Dean Hollister, is shown by the fact that industry absorbed the 50,000 young engineers who graduated during the past year and is seeking more. Responsibility for this sharp decline is blamed in large measure on the report put out early this year by the Bureau of Labor Statistics stating that the market for engineers was going to be glutted for several years as a result of the large number of GI's who sought engineering training (ENR March 16, p. 26).

Concerning the future, Dean Hollister said: "The engineering profession needs about 20,000 engineering graduates annually for civilian peacetime needs alone. The present emergency will convert many of the peacetime needs to emergency needs of industry; and in addition the military needs are to be added to civilian requirements. It is estimated that a minimum of 30,000 graduates from engineering schools will be required each year to supply the total needs.

"The total undergraduate enrollment in 1948 was 226,000 and in 1949, 181,000. The decreases in total enrollment to the present estimated total of 130,000 are 42% and 28% respectively. The present total is still 20% above the 108,000 of 1940 but that figure will be reached in another year if the freshman enrollment is no larger next year. If this size of entering class were to continue, the total enrollment would drop below 90,000.

"Assuming that Selective Service were not withdrawing students from the engineering schools, the graduating classes in the next four years are estimated as follows: 1951, 32,500; 1952, 21,900; 1953, 17,000; 1954, 12,400. It is thus seen that if the draft were not calling engineering students and all who were academically successful were allowed to continue, after next June there would be an annual deficit of from 30 to 60% based on 30,000 minimum need.

"The Selective Service System announced on Oct. 6, last, a plan being promulgated by their technical advisory committees and which the director stated he was prepared to support, whereby those students who completed the freshman term in the upper half would be allowed to continue; those in the upper two-thirds of the sophomore class would be allowed to proceed; and those in the upper three-quarters of the junior class could continue. Assuming that the entire freshmen class ranged from 16 to 19 years, the number to graduate from each 100 freshmen is estimated to be 34. Applying these rates to the present enrollments, it is found that the graduations in 1952 would be 18,000 and in 1954 only 9,000."

This study, Dean Hollister said was made for the Manpower Committee of the American Society for Engineering Education.

For better concrete

Better concrete may be obtained with cements containing more gypsum than specifications permit at present. This is the conclusion reached by Committee C-1 on Cement of the American Society for Testing Materials (ASTM BULLETIN, Oct., 1950).

Tests showed that if advantage is to be taken of the improvement that optimum gypsum will afford, specifications must permit higher SO_3 limits than at present allowed. Although recent changes permit the use of more gypsum with high tricalcium-aluminate content, these amendments have not been liberal enough to allow the manufacturer full opportunity to use gypsum in the quantity that his clinker may require, the committee reports. Increases of 1 to 2% in present limits are indicated.

There is ample evidence in these tests that cements of greater volume consistency can be obtained by using an optimum amount of gypsum.

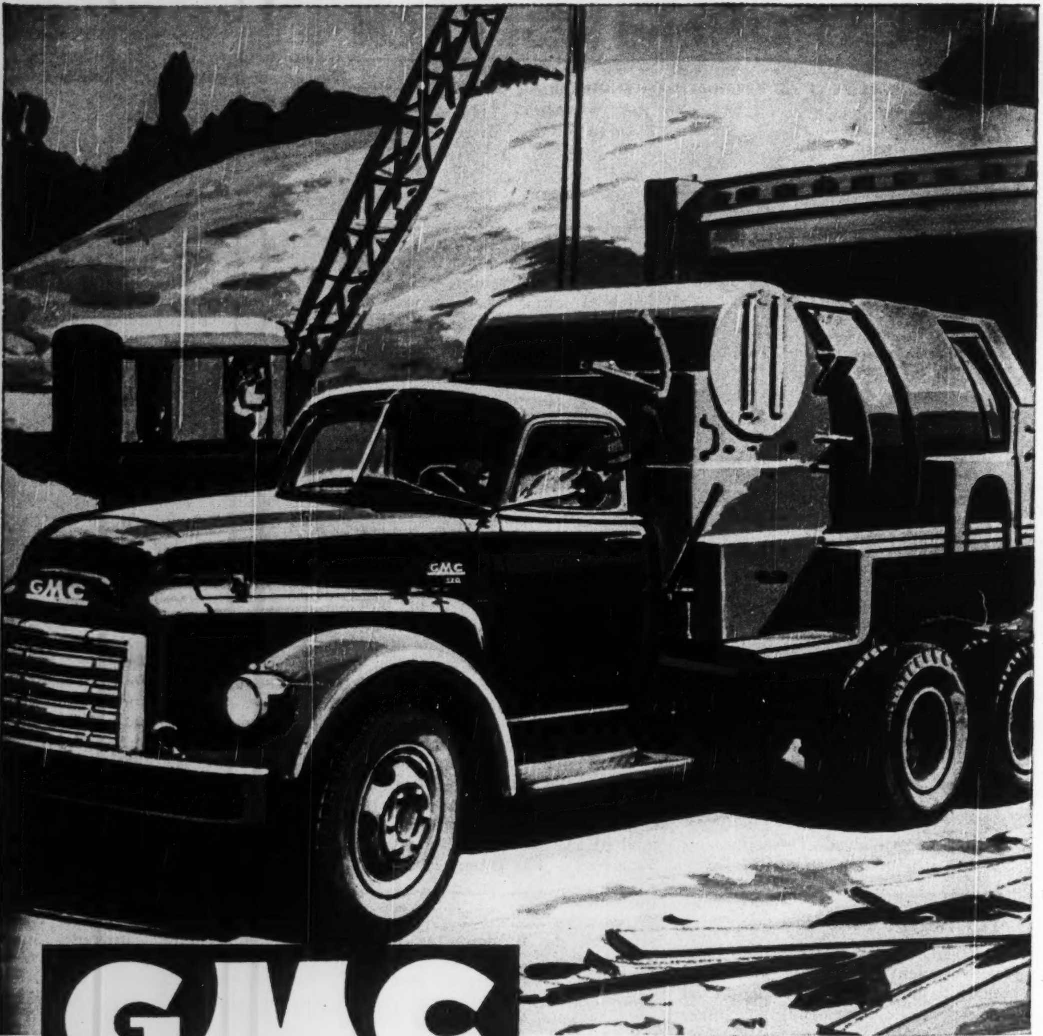
Unless the optimum amount is greatly exceeded, there appears to be little danger of excessive expansion, which apparently is the only reason for maximum limits on the proportion of gypsum.

Educational Notes

Water works problems—An "in service" training course in water works problems will be given by the School of Public Health at the University of Michigan, Feb. 15-16, 1951. This is upon the request of the Michigan section of the AWWA. It will be a technical review, analysis, and interpretation of the basic scientific considerations in current problems for water plant operators, especially in regard to toxic substances.

Weldability of light alloys—Recognizing the value of the extensive research in light alloys and their weldability which has been carried on at Rensselaer Polytechnic Institute since 1942, the Aluminum Company of America has established a $3,500 fellowship at the institute. A check for $3,500 was presented on Oct. 10 to Wendell F. Hess, head of metallurgy at the institute, by E. H. Dix, Jr., assistant director of research in the company's New Kensington, Pa., laboratories.

Municipal administration—Participating in the new municipal administration program opened at Stevens Institute of Technology, Egbert K. Price, assistant chief auditor of the Division of Local Government of New Jersey, is teaching municipal finance administration, and William S. Foster, engineering editor of "The American City," New York, is teaching a course on public works administration. Both courses are open to municipal officials and other qualified persons, including elected and appointed officials and employees of municipal departments.



GMC

GASOLINE & DIESEL TRUCKS

FROM ½ TO 20 TONS

WELL-WHEELED . . . FOR ANY GROUND

Contractors find this GMC 620 Medium-Weight Six-Wheeler unbeatable on the job and on the road. The four dual driving rear wheels move this truck up ramps, into excavations, over soft and rough earth, and through other conditions that stop ordinary trucks. Yet, on the road, it handles as easily as a 4-wheel truck. GMC 620 has GVW of 32,000 lbs., or 50,000 lbs. GCW when used with a trailer. Powered with 155 H.P. valve-in-head gas engine—with option of 177 H.P. at extra cost; wheelbase range from 153 to 219.

GM

GENERAL MOTORS

Your key to greater hauling profits

Get a real truck!

Now's the time to make sure you get EXTRA YEARS in your trucks!

THE trucks you buy today may be the ones you'll have to live with for a long, long time to come. So don't take chances with your business—choose a truck with a reputation for long life and trouble-free service—a truck-built GMC.

Just compare a GMC in the size and type you need with any other make. Or ask a trucker who is using GMC's—and you'll both see and hear why a GMC gives extra years of service.

They're real trucks!

Note the rugged GMC engines, both gasoline and Diesel. These sturdy truck-built power plants seldom require replacements—and they keep on the go with minimum shop time.

You'll find great strength built into GMC frames without costly dead weight. You'll find long life features like Synchro-Mesh transmission, hypoid differential gears, longer springs and full ball-bearing steering are standard on many models.

But most important of all—every GMC is a *real truck*, built by the world's largest exclusive manufacturer of commercial vehicles. They're engineered for extra years of truck work.

Most complete line of trucks in the world

GMC trucks are made in a complete range of light, medium and heavy-duty models, with ratings all the way from 4,600 lbs. GVW to 90,000 lbs. GCW and come in the industry's widest variety of engine-body-chassis combinations to fit every trucking need. *There is a GMC specially designed for your job!*

* * *

Be sure your next truck has the longer life, greater durability, and better performance that you can get in a GMC. Let your GMC dealer give you details—see him soon.

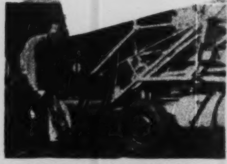
GMC Truck & Coach Division of General Motors

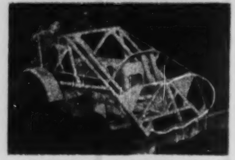
LE ROI MILWAUKEE

Tractair with attachments does the work of expensive specialized equipment ...

Tractair equipped with front-end loader. This loading unit has 8 quickly interchangeable accessories. You can change from bucket to crane to backfill blade in just 55 seconds.

one reason you save time and money with Le Roi TRACTAIR





(Top) loader-equipped Tractair breaking asphalt with Le Roi CLEVELAND Air-Jac paving breakers.

(Bottom) Loader wit backfill blade attachment. Both photos show versatility of this unit.

WHY rent or buy expensive specialized equipment? *For a fraction of the cost you can do the same work* with a Tractair compressor-tractor-attachment combination!

Attachments multiply Tractair's usefulness. In the first place, it's a tractor *and compressor* — can handle breaking, clay-digging, drilling and tamping. When you add the loader shown above (with its 8 quickly interchangeable accessories) the same Tractair can be used for loading, lifting, backfilling, snow-plowing, etc.

Save yourself valuable time and money. Let this tractor-compressor-loader with its 8-in-1 combination keep your initial investment down, your job costs low. See your Le Roi distributor for a demonstration. Write for our new Tractair loader bulletin, and for a complete set of Tractair job-data sheets.

T-12

— and Le-Roi-Cleveland air tools cut costs still more

Experienced distributors everywhere to give prompt service on the job!

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OBITUARY

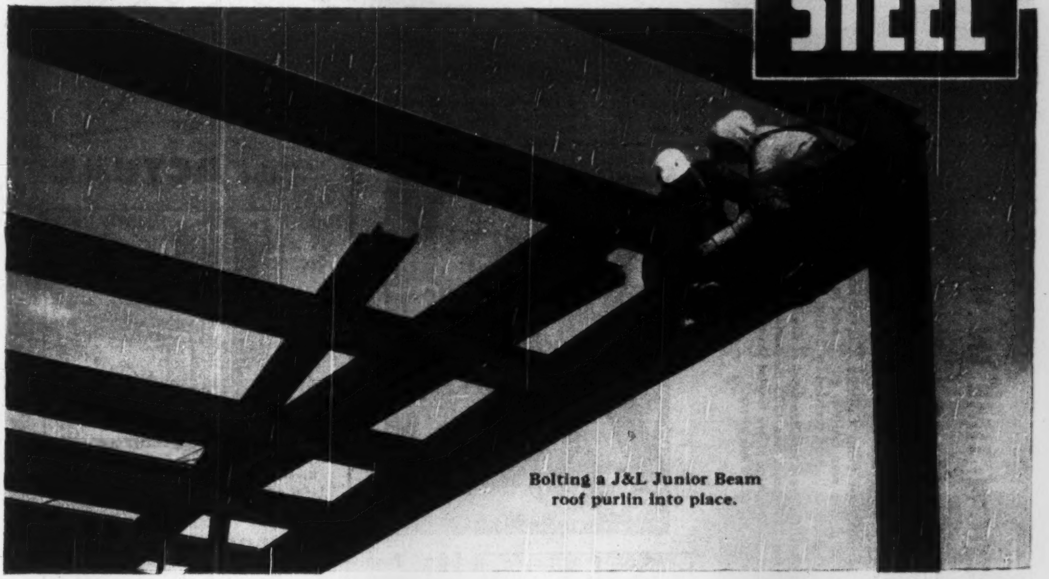
John S. Dodds, 65, professor of civil engineering at Iowa State College, died at Ames, Iowa, Nov. 4. Born in Northfield, Minn., Mr. Dodds attended Carleton College in that state, took a Bachelor of Science degree at Iowa state in 1912, and a civil engineering degree at the same institution in 1917. After serving successively as assistant county engineer, city engineer and campus engineer at Ames, in 1913 he was placed in charge of the education department of the Iowa Highway Commission. In 1917 he became professor of civil engineering at Iowa State, in charge of surveying and city planning, and in 1925 he was also acting dean of men at the college. He was a past president of the National Council of State Boards of Engineering Examiners. Prof. Dodds was one of the pioneers in organizing summer training camps for civil engineering students and had been in charge of the camp set up by Iowa State College since its inception.

Harry L. Hurd, 67, retired office manager of the N. Y. City Board of Transportation, died at White Plains, N. Y., Nov. 4. Some years ago he had been assistant engineer of the N. Y. City Board of Water Supply. He started with the U. S. Navy Department at the Navy Yard in Boston, Mass., in 1901. Later he made topographical maps and location studies for the Catskill Aqueduct and the Kensico reservoir and dam of the N. Y. water supply, and from 1914 to 1917 he was a junior engineer in subway construction for N. Y. City.

George W. McCordic, 51, Detroit, Mich., engineer-director of the Huron-Clinton Metropolitan Authority, died Oct. 27. He was graduated from the University of Michigan in 1922. He became manager of the Port of Detroit Commission and first assistant in the Public Works Administration for Michigan. He was employed by Hubbell, Hartgering & Roth of Detroit. In 1929 he started McCordic, Stadler and Larsen. In 1933 he became chief engineer for Michigan for the Public Works Administration, and in 1938 and 1939 represented the public Works department on construction of sewage disposal systems in Detroit and Michigan. In 1940 he was appointed manager of the Port of Detroit Commission, but in 1941 was recalled by the federal government to become regional director of defense for the states of Michigan, Ohio, and Kentucky.

Per-ton COST of steel construction CUT with JUNIOR BEAM ROOF PURLINS

J&L STEEL



Bolting a J&L Junior Beam roof purlin into place.

Framework of 120′ x 200′ building erected by four men in one week

A construction speed record was established recently when four men—in one five-day week—erected the entire steel frame-work for an industrial plant 120′ x 200′ in Cleveland, Ohio, for the Standard Products Company.

Just to prove this record was no accident, these same men, during the next two weeks, erected a tool and die shop 340′ x 50′ and a two-story office building 130′ x 36′.

What's more, the estimated cost-per-ton for steel erection was materially reduced because the job went so fast!

J&L Steel Junior Beams used as roof purlins were the key factor that made this speed possible. Here's how:

1. J&L Junior Beams eliminated delays in obtaining structurals made to special order as they were readily available from warehouse stocks.

2. They were light enough for two men to handle easily on the job, and they were bolted into final position as erection progressed.

J&L Junior Beams are light-weight structurals, produced exclusively by Jones & Laughlin Steel Corporation. They are of simple construction, and require no fabrication other than end connections. Junior Beams are rigid, and vibration-resistant . . . have a lower deflection factor than other structurals of equivalent weight . . . are easy to install, fire-safe and permanent.

On Standard Products Company's new plant:
Builders, The Builders Structural Steel Corp.
Structural Engineer, Edward G. Hoefler.
Contractor, Hamman Construction Company,
all of Cleveland, Ohio

Write today for our new booklet, "Skyscraper Construction for Every Building with J&L Junior Beams." It shows how Junior Beams are used as floor joists and roof purlins, with erection details and specifications, loading and spacing tables.

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428 Jones & Laughlin Building
Pittsburgh 30, Pa.

Please send me a copy of the booklet entitled "Skyscraper Construction for Every Building with J&L Junior Beams."

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Company____________________
Address____________________
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From its own raw materials, J&L manufactures a full line of carbon steel products, as well as certain products in OTISCOLOY *and* JALLOY *(hi-tensile steels).*

PRINCIPAL PRODUCTS: HOT ROLLED AND COLD FINISHED BARS AND SHAPES • STRUCTURAL SHAPES • HOT AND COLD ROLLED STRIP AND SHEETS • TUBULAR, WIRE AND TIN MILL PRODUCTS • "PRECISIONBILT" WIRE ROPE • COAL CHEMICALS

THE ACTUAL IS LIMITED: THE POSSIBLE IS IMMENSE

NEW LINCOLN PLANT CREATED BY INCENTIVE-INSPIRED CO-ACTION IN DEVELOPING POSSIBILITIES IN PRODUCT

SAVES $68,522 . . . CUTS ERECTION TIME IN HALF . . . ELIMINATES DISTURBANCE

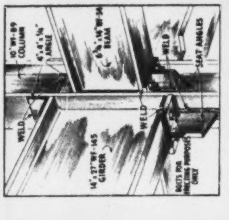
Industrial Construction. On the publishing plant for the Baltimore Sun, the bid on riveted construction was $551,508 . . . welded construction only $482,986, saving $68,522. Structural weight was cut 7%.

Telephone Exchange. The framework for the Associated Telephone Company, West Los Angeles, California, was erected in half the time . . . steel tonnage 18% less than riveted construction. Welding also eliminated vibration and disturbance to $2,000,000 worth of delicate instruments.

School Building for Fenn College, Cleveland, Ohio. 130 ton steel structure was bolted, guyed and made ready for welding in 5 days . . . field welded by 2 men in 10 days.

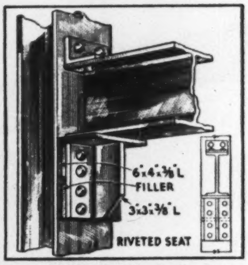
New 9th Edition **"The Procedure Handbook of Arc Welding Design and Practice." Has 1200 pages and 1300 illustrations. Complete section of 365 pages on Designing of Arc Welded Structures. Price only $2.00 postpaid in U.S.A.; $2.50 elsewhere.**

Typical Open Box Column, *one of 14 shop fabricated for Associated Telephone Co. exchange, West Los Angeles, California.*


10" WF-89 COLUMN
4"x4"x⅜" ANGLE
6¾"x14" WF-34 BEAM
14"x27" WF-145 GIRDER
WELD
WELD
WELD
BOLTS FOR ERECTING PURPOSES ONLY
SEAT ANGLES

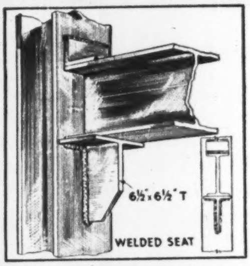
Beam-to-Column Connection *used on three story Fenn College Mechanical Engineering Building. Photo shows welders completing column splices.*

the ACTUAL


6"x4"x⅜" L
FILLER
3"x3"x⅜" L
RIVETED SEAT

Riveted Seat *for 45,000# load. Has 6" x 4" x ⅜" seat angle, a ⅛" filler, a 3" x 3" x ⅜" stiffener angle 12" long and 8-¾" rivets.*

increasing the YIELD


6½"x6½" T
WELDED SEAT

Welded Seat *requires only 3" piece of 6½" x 6½" T and 15 inches of ⅜" fillet weld.*

the IMMENSITY of the POSSIBLE turns out to be a Saving in Steel of 7% to 18%

LEARN HOW WELDING SIMPLIFIES STRUCTURAL DESIGN

Send for Studies in Structural Arc Welding, write Dept. 1310,

THE LINCOLN ELECTRIC COMPANY

CLEVELAND 1, OHIO

MEETINGS

William F. Nelson, president of the Washington, D. C., Building Congress announced the names of officials for the coming year. The group, largest of the local construction organizations, with a membership of about 1300, represents five sections of the building industry—finance, design, construction, materials and labor. The seven elected directors are E. L. Davis, of Davis, Wick, Rosengarten Co., general contractors; Frank H. Haines, Standard Engineering Co., Maurice R. Colbert, Maurice J. Colbert Co.; C. W. Humphreys, Mohler Construction Co., General contractors; Dean J. Locke, Capital Transit Co., C. F. Preller, Electrical Workers Union and A. Hamilton Wilson, architect.

Dave Chapman, Chicago industrial designer, has been elected president of the Society of Industrial Designers. Other newly elected officers of the Society are: Viktor Schreckengost, of Cleveland, vice president; Robert Hose, of New York, secretary; and A. Baker Barnhart, of New York, treasurer. In accepting the presidency, Chapman said: "In the six years since the founding of the Society of Industrial Designers, industrial design as a field itself, has reached maturity. Today, at this critical point in national and global affairs, we find ourselves faced with an economy of scarcity, coupled with a diversion of manpower and capital to the war effort. The industrial designer can and will help make it possible for the buying public to continue enjoying most of its necessities and luxuries during this period, despite foreshortened production; and in addition, can help do a service to freedom-loving peoples by transforming our preparedness dollars into more and better war materiel."

J. Norman Pease of Charlotte, N. C., has been nominated president of the North Carolina section of the American Society of Civil Engineers. Others nominated included Carroll Mann, Jr., of Greensboro, first vice-president, and P. D. Davis of Durham, second vice-president. The formality of election will take place at a meeting of the section at Duke University in January.

Too many names—When the Chelan County Planning Commission at Wenatchee, Wash., began the erection of new signs on county roads, it found a tough problem. One road had three names, many had two, there were many duplicates.

CALENDAR

Building Research Advisory Board, Research correlation conference. "Fire resistance of Exterior Non-Load-Bearing Walls." National Academy of Sciences Bldg., Washington, D. C., Nov. 21.

Indiana Water Conservation conference, Purdue University, Lafayette, Ind., Nov. 28-29.

Arizona Sewage & Water Works Association, Pioneer Hotel, Phoenix, Ariz., Nov. 30-Dec. 2.

American Association of State Highway Officials, Miami, Fla., Dec. 4-7.

County Engineers of Iowa, Iowa State College, Ames, Dec. 6-8.

Building Industry Employers of N. Y. State, BTEA Clubrooms, 2 Park Ave., New York City, Dec. 14-16.

Highway Research Board, National Research Council, annual meeting, Washington, D. C., Jan. 8-12.

American Society of Photogrammetry, annual meeting, Shoreham Hotel, Washington, D. C., Jan. 10-12.

N. Y. Section AWWA, luncheon meeting, Park-Sheraton Hotel, New York City, Jan. 16.

National Association of Home Builders, annual convention and exposition, Stevens and Congress Hotels, Chicago, Ill., Jan. 21-25.

Third California Conference on Street and Highway Problems, University of California, Berkeley, Jan. 24-26.

Associated Equipment Distributors, annual meeting, Stevens Hotel, Chicago, Ill., Jan. 28-Feb. 1.

Steinman gets mention

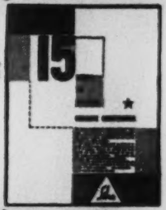
D. B. Steinman, New York consulting engineer, participated in a 3,500 kronen honorable mention prize for an entry in the recent design competition for a new traffic artery for Stockholm, Sweden. The design included a long-span bridge and a tunnel. Steinman was associated with three New York architects, Walter Duschensky, Alf Byden and Abel Sorenson. Their proposal included a 1,450-ft span suspension bridge with a single cable supporting a tubular stiffening truss. Street railways and bicycle paths were placed inside the truss, with highway and sidewalks outside on cantilever brackets. About 200 entries from many countries were received. There were four prizes and six honorable mentions.

To save Ohio gas—To avert a crisis in Ohio's gas supply, the State Public Utilities Commission has restricted the installation of gas conversion space-heating units. Seven companies have been ordered to limit installations to one conversion unit for each unit installed in a new house. Three other companies have been ordered to freeze all applications for space heating permits. Their distribution equipment does not permit addition of new heating customers. The utilities are authorized to cut off all gas service to householders who install unauthorized heating equipment.

FOR
CONCRETE RESULTS
LIKE THESE

[illegible] Harder Surface
[illegible] Better Bond to Steel and Aggregate
[illegible] Higher Flexural Strength
[illegible] Higher Resistance to [illegible] Solutions
[illegible] Lower Shrinkage
Higher Resistance to Cracking and Crazing
Higher Resistance to Water Corrosion, Erosion and Abrasion
plus
Greater Workability, [illegible]
Faster Placing, Better Finish

Send for this new book Today...



Lists illustrated information and performance data on PLASTIMENT CONCRETE ... its greater workability, its greater field economy, its superior results, and its extra durability factors for jobs which require your guarantee. Discusses 14 additional materials of construction, engineered for coating, sealing, hardening and repair work on concrete and masonry. Complete with product descriptions and composition, specific uses, contributing properties and Architect's Specifications. To obtain your free copy, write today or use the coupon below.

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Results obtained with PLASTIMENT CONCRETE taken from test reports and records of U. S. ENGINEER CORPS, PUBLIC ROADS ADMINISTRATION, SMITH-EMERY COMPANY, and other independent laboratories, confirmed by performance records on worldwide installations totaling millions of cubic yards of concrete. PLASTIMENT and other Sika products have been tested and approved on Federal, State and Municipal projects and are approved under Building Codes of principal cities.

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Send me a copy of your new book on materials of concrete construction.

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Smoother Concrete Finish

WITH GPX PLASTIC-FACED PLYWOOD CONCRETE FORMS

Before GPX, a builder had to grind and point ceilings and THEN apply several layers of plaster in order to get a smooth, finished surface. NOW, by pouring concrete into forms of GPX, the resultant surface is so smooth that, *with a minimum of preparation*, the ceiling can be painted without plastering. Contractors and builders everywhere are finding that the smoother concrete surfaces produced by the use of GPX Concrete Forms save time, work and money.

The inherently smooth, armor-hard plastic surface of GPX gives it unbelievable wearing qualities. The number of re-uses is determined solely by the care with which it is handled and the cutting necessary for pipes and other openings. GPX Concrete Forms, if handled with reasonable care, can be used literally scores of times.

GPX is an extremely high-grade exterior Douglas Fir Plywood with a superior plastic overlay applied under heat and pressure at the time the plywood is being bonded. RESULT: the plastic flows, condenses and sets, forming a hard plastic surface that has become *a part of the plywood itself.*

Investigate GPX today! It is a quality product of Georgia-Pacific Plywood & Lumber Co. with practically unlimited application for building, in industry and on the farm. For further information, write on your firm letterhead or fill in and mail the coupon.

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OTHER GEORGIA-PACIFIC PRODUCTS:

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- *Western and Southern mouldings*
- *Residential and factory floorings*
- *Poles and pilings*
- *Long leaf and short leaf Pine lumber and timbers*
- *Treated lumber and timbers*
- *Western Pine lumber*
- *Cypress and Redwood lumber*
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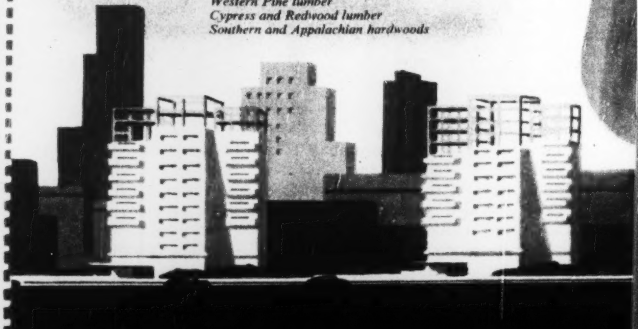
Please send me information on your plastic-faced plywood, GPX.

NAME..

FIRM NAME...

FIRM ADDRESS..

YOUR POSITION...



Investigate GPX for *all* construction jobs!

GPX, Georgia-Pacific's miracle plywood with the plastic face that is part of the plywood itself, is working production miracles in building and construction. Its unique properties include: a satin-smooth, armor-hard surface, extra strength and long life under adverse conditions.

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GPX IS ABRASION-RESISTANT

GPX's armor-hard surface resists the wear and abrasion of concrete mixtures of cement, sand and gravel; the scuffing wear in chutes and other uses where thousands of articles are passed along it constantly.

GPX IS WEATHERPROOF

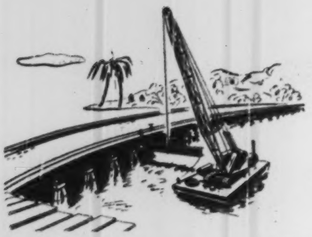
GPX's inherent qualities resist the most adverse conditions of climate and weather to give long, efficient life, no matter where it is used.

GPX IS WATER-RESISTANT

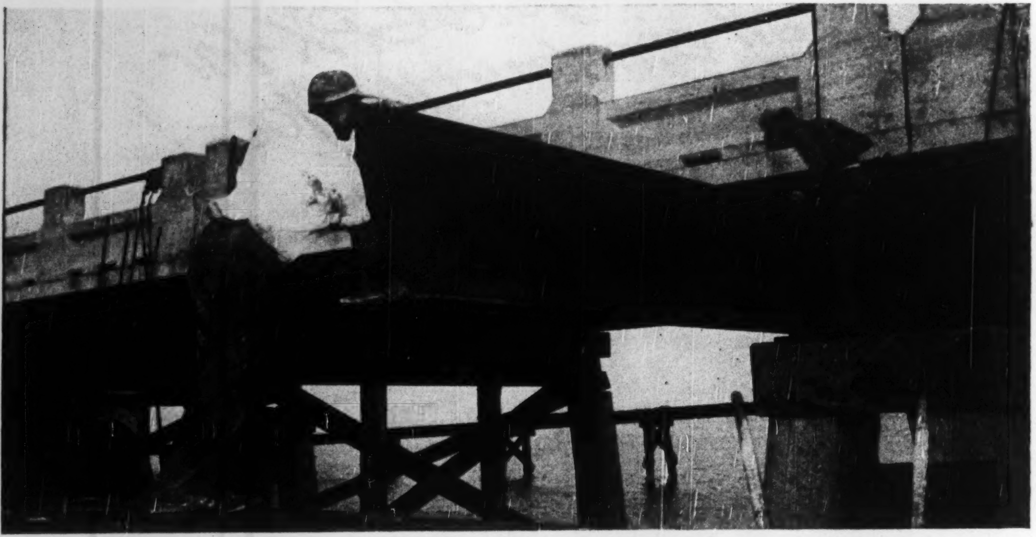
GPX withstands even tropical rains, humidity and all the extremes of moisture, heat and condensation.

GPX IS DURABLE

GPX lasts and lasts long after ordinary materials have checked and cracked and need to be repaired or replaced. GPX's plastic surface combined with high grade exterior type Douglas Fir Plywood is one of the finest building materials available today.



FLOOR BEAMS of MAYARI R in rebuilt Key West Bridges



Mayari R floor beams (30-in. by 108-lb Wide-Flange) are replacing treated timber caps in Teatable Key Bridge on the overseas highway, Key West, Fla. Engineers: State Road Department of Florida. General Contractors: Powell Brothers, Inc., Fort Lauderdale.

The State Road Department of Florida recently found it necessary to replace the original treated timber caps and pile bents in the bridges over Teatable Key and Lignum Vitae Channels on the Key West overseas highway system.

Severe teredo action and deficient penetration of the piles caused near-failure in the original substructure. In order to utilize the sound deck structure of the bridges the highway engineers devised an original and economical method of replacing the floor beams and support bents without interrupting traffic. A composite pile consisting of a steel "H" section in the lower portion, and reinforced precast concrete in the upper portion was used. The piles were driven outside of the existing bridge deck. Mayari R low-alloy, high-strength steel floor beams were then inserted between the top of the piling bents and the underside of the superstructure. The upper flanges of the Mayari R beams were welded to the original carbon steel floor stringers, while the lower flanges were welded to steel wedges resting on plates supported by the bents.

Mayari R was selected because of its excellent resistance to atmospheric corrosion (5 to 6 times that of plain carbon steel) . . . its high yield point (approximately 1½ times that of structural carbon steel) . . . and its ease of weldability (ordinary welding methods and equipment do the job).

The use of Mayari R for structural purposes has increased substantially in recent years. For further information on the applications, properties and recommended unit stresses of this highly versatile steel write or phone any of our sales offices for a copy of Booklet 259.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation.
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BETHLEHEM STEEL

Mayari R *makes it lighter... stronger... longer lasting*

UNIT PRICES BID BY CONTRACTORS

Catskill Thruway divided highway and bridges

A 7.77-mile stretch of New York's Catskill Thruway, with 5 bridges drew 10 bidders, all below the engineer's estimate of $4,880,000. The low bid, at $3,659,497, was 33.4% below this estimate and 6.1% below the second low bid. The bids, 30.7% apart, were opened Oct. 11, 1950, by the New York State Thruway Authority. J. S. Bixby, of Poughkeepsie, is district engineer.

This work, along with 3.18 miles of grade-separated intersecting roads, is in Ulster Co. between Kingston and Saugerties and only 5½ miles from the Hudson River. It is also about ½ mile from a railhead. The Thruway will be of reinforced concrete pavement, 50 feet wide and 9 inches thick, with a dividing mall of varying widths not less than 20 feet. The intersecting roads work will include 3.03 miles of asphalt concrete Type 1A, optional, with 2-inch top, 5-inch bottom and 9-inch foundation, and 0.15 mile of miscellaneous work.

The five bridges are Alpha I-beam. Three highway separation structures will have 4 spans each for total lengths of 268 feet, 205 feet 10 inches and 214 feet 6 inches. Two stream bridges will have 2 spans each with lengths of 88.5 feet and 72 feet.

Started Nov. 1, the job must be completed by July 1, 1952. Minimum hourly wage rates for unskilled laborers range from $1.50 to $2.25; semi-skilled equipment operators, $1.55 to $2.75; blasters, $1.75; cement finishers, $2.50; crane & dragline operators, $3.00; carpenters, $2.25; truck drivers, $1.55; structural iron and steel workers, $3.00.

The low bid includes $1.00 each for disposal of 52 buildings: houses, barns, garages, chicken houses, privies, silos of concrete and tile, pig pens, corn cribs, sheds, 2 stone well houses, a metal smoke house, stone fuel oil storage building, and a school house. On these items the engineer's estimate ranged from $10 to $800. These are not shown in the accompanying table of unit prices.

Bidders included:

1 Lane Const. Corp, Meriden, Conn. (Contract)	$3,659,496.65
2 Johnson-Drake & Piper, Inc., New York City	3,884,310.50
10 Geo. M. Brewster & Son, Inc., Bototo, N. J.	4,781,600.00
Engineer's estimate	4,880,000.00

Items	Quantity	Unit prices 1C	Unit prices 2
Clear & grub ls	....	$55,000	$55,000
Excav, uncl. cy	1,138,000	0.50	0.40
Tren, cluv, br. cy	52,030	2.50	2.50
Trim rd section lfrd	58,280	.45	.50
Prep fine grade sy	264,840	.25	.30
Sewer pipe opt			
18" lf	3,200	4.50	3.50
24" lf	5,560	7.00	5.50
30" lf	80	9.50	8.50
Pipe underd'n (conc or vit) Opt			
4" lf	520	1.50	.50
6" lf	37,000	1.50	1.90
12" lf	1,500	2.00	3.50
Paved invert CMP culv			
30" lf	80	9.00	8.00
36" lf	40	11.00	10.50
42" lf	240	15.00	11.50
CM pipe heavy			
12" lf	390	4.00	3.00
18" lf	190	5.00	4.00
RC culv pipe			
18" lf	2,010	5.00	4.50
24" lf	4,750	8.00	6.50
30" lf	2,240	11.00	9.00
36" lf	1,230	13.00	10.00
42" lf	200	15.00	13.50
48" lf	1,140	20.00	16.00
Portl cmt, type 2 bbl	11,208	3.30	3.50
Type 2A bbl	88,337	3.30	3.50
Nat cmt, type N bbl	14,290	3.30	3.85
Cl 1A conc for struc cy	3,574	45.00	45.00
For railings cy	25	100.00	75.00
Cl 1 conc. cy	5,060	35.00	40.00
Rubl stone masonry laid dry cy	300	30.00	35.00
Mtl reinf for conc pav. syp	230,120	.57	.70
St fabric reinf sy	7,020	.50	.60
Transv jt suppt opt. lf joint	23,200	1.00	.75
Long. jt suppt opt. ea	17,060	.75	.60
Bar reinf (struc) lb	605,300	.10	.14
Spiral bar reinf lb	17,695	.75	1.00
Struc steel lb	2,353,000	.12	.15
Misc metals lb	147,300	.15	.12
Guide rails, opt lf	26,900	2.20	2.00
Guide posts, opt. ea	525	8.00	8.00
Metal railg lf	2,174	12.00	15.00
Fdn crse ROB grav or app stone scrng opt cy	147,670	1.50	1.40
Botm crse, brok stn. cy	4,835	6.50	7.00
Cmt conc pav cy	57,995	9.50	11.80
Asph conc type 1A opt. T	4,835	9.00	9.00
Bit mat damppr gal	640	1.00	1.50
Membrane watrpr sy	5,920	1.70	2.00
Maint, prot traf ls	....	10,000	12,000
Maint, prot traf ls	....	10,000	1,000
Stone fill cy	4,650	3.50	2.00
Dry stone pav sy	1,855	3.00	3.50
Dry rip-rap cy	2,590	6.00	15.00
Grouted rip-rap cy	20	15.00	15.00
Spec dry rip-rap cy	690	12.00	20.00
Cofferdams ls	....	31,600	39,000
Timbr sheet pilg sf	300	1.00	2.50
Piles			
St bearg lf	9,200	4.00	4.00
Cast-in-pl conc. lf	7,150	5.35	5.00
St bear 10"H 42#. lf	1,030	4.75	4.00
10"H 57# lf	1,270	5.50	5.00
Equip for driv, f. ls	....	4,500	5,500
Scrnd grav LM #2 & 3 size cy	260	5.00	5.00
Conc gutters sy	200	5.00	5.00
Cobble gutters sy	550	5.00	5.00
Leach basin Type A. ea	1	250.00	250.00
Catch bsn			
Type A. ea	71	100.00	175.00
Type B. ea	6	125.00	200.00
Type D ea	2	150.00	200.00
Drop inlets ea	43	150.00	180.00
Manholes ea	2	250.00	180.00
Xtra depth CBs, DIs & MHs lf	90	10.00	50.00
Alter MH & CB ea	11	20.00	30.00
ROW markers, opt. ea	410	7.00	6.00
Timbr & lumbr Mfbm	1½	200.00	400.00
Hy baricade, remov & reset ls	....	100.00	100.00
ROB grav fill cy	5,900	2.00	2.00
Topsoil pl from stock-piles cy	69,805	1.00	1.10
Seed & mulch ac	153	225.00	220.00
Furn sod & sod'g sy	7,060	1.15	1.50
Calc chl, f & apply T	22	35.00	70.00
Fdn crse, ROB grav LM cy	3,775	2.50	1.50
Detour & maint traf at Lake Katrine Rd. (Co. rd #41) ls	....	5,600	7,000
at Mt. Marion Rd (Co. rd #34) ls	....	2,200	2,500

* f—furnished; pl—place

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CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

ELSIE EAVES, Manager *J. A. MAHONEY, Reports* *M. R. ROESSLER, Statistics*

WATER SUPPLY

BIDS ASKED

Que., Cap St. Ignace—B.A. 11/20—J. A. Fortini, secy., Municipality, WW network sys. Approx. $200,000. Plans deposit $30. G. Piette, 13 Place de' Alguillon, Quebec City, engr. CD 8/4.

Tex., Abilene—B.A. 11/24—City, A. P. Hancock, mgr., Abilene, filter plant imprvs., incl. sedimentation basin, furnish, install equip. for flocculators, plant water lines, and misc. appurtenances. $100,000. Plans deposit $25. Freese & Nichols, 407 Danciger Bldg., Fort Worth, engrs.

La., Tullos—B. A. 11/28—Town, water distr. sys., 75,000 gal. elevated storage tank, extended date. Manson & McCain, Inc., 8200 Florida St., Baton Rouge, engr. CD 10/13.

Fla., Jacksonville—B.A. 11/30—City, City Hall, ground storage reservoirs, aerators, pump. station at Norwood Pump Station. Owners Adv. 5-2875. Plans deposit $50. Extended date. Reynolds, Smith & Hills, 227 Park St., Zone 1, engrs. CD 10/16.

LOW BIDDERS

Calif., Holtville—City, Oct. 25, water filtration plant, from Kelley Constr. Co., 1815 W. Willard St., Long Beach, **$31,000**. Est. $35,000. CD 10/13.

Md., Hyattsville—Washington Suburban Sanitary Comn., Hamilton St., Oct. 30, Contr. 255 W&S, water and sewer mains in Glen Echo Heights, from Nance & Vivadelli, 2420 Wilson Blvd., Arlington, Va., **$230,146**; Contr. 813 W&S, water and sewer mains in Carroll Knolls, from Ahl Bros. Constr. Co., Inc., Branchville, **$35,800**.

Pa., Greensburg—Municipal Auth. of Greensburg, Greensburg, Oct. 23, contr. 12, substructure and superstructure filtration plant and pump. station, near here, from Westmoreland Const. Co., Greensburg. Approx. **$300,000**. CD 9/21.

Pa., Somerset—Dpt. Property & Supplies, 1400 N. 9 St., Harrisburg, cancelled bids to have been opened Nov. 1, water supply and distr. sys., incl. pump station addns., and mechanical work, electrical installation of lighting and power for water supply sys. at Somerset State Hospital. CD 10/25.

CONTRACTS AWARDED

Ia., Albion—City, water sys. exten., distribution sys., to Samuel Lyle, Laurel, **$28,866**. Bids 10/24. CD 10/11.

Tex., Brownsville—City, clear water concrete ground storage, own forces. **$70,000**. CD 7/30/46.

SEWERS, WASTE DISPOSAL

BIDS ASKED

Va., Roanoke—B.A. 11/20—City, Municipal Bldg., lower and upper Roanoke River interceptor sewers. Mattern & Mattern, 118-A Campbell Ave. S.W., engrs. CD 11/2, under LB.

Ga., Manchester—B. A. 11/21—City, sanitary sewer imprvs. Approx. $75,000. Wiedeman & Singleton, P. O. Box 1878, Atlanta, engrs. CD 12/21/45.

† **Me., Togus**—B. A. 11/21—Veterans Admin., Munitions Bldg., Wash. 25, D. C., 4,700 cu. ft. Sewage Pump House No. 226 for Veterans Admin. Center.

Mich., Paris—B.A. 11/22—State, A. N. Langius, dir. State Bldg. Dpt., 115 State Office Bldg., Lansing, sewage disposal sys., treatment facilities, etc., State Fish Hatchery.

Calif., Needles—B.A. 12/18—City Council, 550 Front St., (1) sewage treatment plant, pumping plants, trunk sewers (2) sanitary sewer mains and house laterals for entire city $430,000. Plans deposit $25 each. Ludwig Brothers Eng. Co., 608 S. Fair Oaks St., Pasadena, engr.

LOW BIDDERS

Conn., Derby—City, Finance Comn., City Hall, rejected bids Oct. 27, 3 story, rein.-con., brick refuse incinerator, Marshall Lane. **$110,000**. Will re-advertise. CD 10/23.

Md., Hyattsville—Washington Suburban Sanitary Comn., Hamilton St., Oct. 30, Contr. 860-S, approx. 200 ft. 10 in. c.i. sewers, 3,215 ft. 8 and 10 in. plain or vitr. clay sewers, etc., from Nickles Bros., 4707 Baltimore Ave., **$60,796**, Harry R. Hall, 4017 Hamilton St., engr.

† **Alaska, Fairbanks**—Office of Territories, Alaska Pub. Wks., Dpt. Interior, Juneau, rejected bids, 8 and 10 in. laterals and 12- to 24-in. trunk sewers in western part of city, north of Hilton Ave. between Denali Ave. and Vagabond Rd. in Weeks Field Subdivision, Proj. Aaa-50-A-33, L. B. **$327,668**. Project postponed a year. CD 9/19, under LB.

CONTRACTS AWARDED

Calif., Los Angeles—Bd. P. Wks., City Hall, sewers in Valley Blvd., to Bosko Constr. Co., Inc., 1728 Greenwood Ave., **$259,323**. Bids 10/18, awarded 10/27. CD 10/5.

Tex., Bartlett—City, sewerage sys. imprvs., exten., etc., force account. **$60,000**. Bids 4/6 rejected, L. B. **$52,485**. CD 4/13, under LB.

Tex., Brownsville—City, sanitary sewer line exten., own forces. **$55,000**. Sigler, Clark & Winston, Box 157, Weslaco, consult. engrs.

Ont., Brantford—Brantford Twp., 73 Charlotte St., drainage sys., laying approx. 12,000 ft. 12- to 30-in. storm sewer pipe, 40 manholes and 90 catchbasins, to Cornell Constr. Co., 66 Alice St., **$80,205**. Bids 9/20, awarded 10/30.

BRIDGES

BIDS ASKED

New Jersey—B.A. 11/21—New Jersey Turnpike Auth., 65 Prospect St., Trenton,

Bergen Co.—Contr. 46, substructure and superstructure Overpeck Creek Causeway, constr. steel sheet piling cells and timber bulkheads on side of approach embankments, embankment construction and other incidental work in connection with N. J. Turnpike. Plans deposit $5. Howard, Needles, Tammen & Bergendoff, 55 Liberty St., New York, N. Y., engrs. CD 7/13/49, under Streets and Roads.

LOW BIDDERS

Fla., Fort Lauderdale—City, open steel decking on 3 municipal bridges, from Powell Bros. Constr. Co., Fort Lauderdale. **$85,009**.

Kentucky—State Hy. Dpt., Frankfort, Oct. 27, wid'n. 0.176 mi., reconstr. bridge over Kentucky River, Frankfort-New Castle Rd., Proj. U 527 (1), SP 37-225, Franklin Co., from Harry O. Wyse, 881½ E. High St., Lexington, **$227,438**; 3 culverts on Mullins School Rd., 2 culverts on Richardson School Rd., 1 culvert on Pottsville-Melber Rd., and 1 culvert on Kentucky-Tennessee State Line Rd., Proj. RS (42-788) 48-868) (42-848), (42-828), Graves Co., from Lyons & Breeden, Rogersville, Tenn., **$82,341**. CD 10/9, under Bridges and Streets & Roads.

▲ **New York**—Bureau Contracts & Accounts, Albany, Nov. 1, bridge substructure 0.71 mi. Fuhrmann Blvd. high level bridge, Proj. U 750 (5). Cont. FAC 50-11, Erie Co., from Bates & Rogers Constr. Corp., 600 W. Jackson St., Chicago, Ill., **$1,397,433**. Est. $1,791,000. CD 10/9.

CONTRACTS AWARDED

† **Wash., Richland**—Atomic Energy Comn., Richland, 710 ft. rein.-con. bridge consisting three 150 and two 110 ft. spans over Yakima River, to Manson Constr. & Eng. Co., 821 Alaskan Way, Seattle, **$472,606**. Est. $500,000. Bids 10/31. CD 10/10.

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $28,000; other public works $50,000; industrial buildings $68-000; other buildings $250,000.

Classes of Construction

(Name in order of Listing)

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Latin America
Public Buildings
Commercial Buildings
Industrial Buildings
Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
B.A	Bids Asked
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

STREETS AND ROADS

LOW BIDDERS

Arizona—State, 17 and Jackson St., bit. 10 mi. Phoenix-Tucson Hy., Pima Co., from Acme Material-Daley Constr. Co., 2400 S. 16 St., Phoenix, **$399,843**.

† **D. C., Wash.**—Bureau Public Roads, Dpt. Commerce, 1440 Columbia Pike, Arlington, Va., Oct. 31, grav. base, hot b.conc. and c.conc., 1,261 mi. West Potomac River Roads, Proj. 13 A1 for National Capitol Parks, from Highway Constr. Co., P. O. Box 4437, Zone 17, **$102,947**.

▲ **Kentucky**—State Hy. Dpt., Frankfort, Oct. 27, from R. R. Dawson Bridge Co., Bloomfield, traffic bound slag surf. 6.404 mi. Grayson-Ashland Rd., Proj. FI 4 3), SP 22-28, Carter Co., **$352,109**; drain traffic bound limestone 3.646 mi. Delphia-Cloverfork Rd., Proj. S 133 (3), SP 97-502, Perry Co., **$191,591**; traffic bound limestone 3.752 mi. Brodhead-Eubank Rd., (KY 70), Proj. S 447 (3), SP 100-355, Pulaski Co., **$51,949*****from W. C. Snider, Danville, traffic bound limestone surf. 3.861 mi. Bulan-Lost Creek Rd., Proj. S 130 (2), SP 97-702, Perry Co., **$193,857**; traffic bound limestone surf. 4.29 mi. Newport-Maysville Rd., Proj. S 198 (1), SP 96-337, Pendleton Co., **$213,510***** from Robinson & Lashbrook, Owensboro, traffic bound surf. 2.793 mi. Rochester-Quarlity Rd., Proj. S 357 (3), SP 16-356, Butler Co., **$63,441*****from Sam Nally Co., Bardstown, traffic bound surf. 4.511 mi. Louisa-Catlottsburg Rd., Proj. F 537 (1), SP (64-113) (10-85), Lawrence and Boyd Counties, **$510,870**; reconstr. traffic bound surf. 5.326 mi. New Castle-Drennon Springs Rd., Proj. RS 52-67, Henry Co., **$94,137***** from Fount Crow, Ltd., Beaver Dam, reconstr. traffic bound surf. 5.135 mi., McHenry-No. 19 School Rd., Proj. RS (92-504), Ohio Co., **$73,987**; reconstr. traffic bound limestone surf. 7.623 mi. KY 69 Olaton-Grayson Co. Line Rd., Proj. (RS 92-524), Ohio Co., **$61,402*****from Licking River Limestone Co., West Liberty, traffic bound limestone 2.716 mi. Grassy Creek-Helechawa Rd., Proj. S 101 (2), SP 88-198, 119-123, Morgan and Wolfe Counties, **$69,882*****from Ford-Holman Constr. Co., Bardwell, local bank or creek grav. 7.57 mi. Kevil-Gape Rd., Proj. RS 4-261, Ballard Co., **$92,221***** from Meyers & Greene, Hazard, traffic bound limestone 1.278 mi. Darford-Sasafras Rd., Proj. S 166 (2), SP 60-238, Knott Co., **$53,024***** from Henderson Hite Constr. Co., Bardstown, reconstr. traffic bound limestone surf. 5.936 mi., Bradfordville-Calvary Rd., Proj. RS 78-442, Marion Co., **$75,025*****from Ballard & Hamilton, Bardstown, reconstr. traffic bound surf. 5.15 mi. Dry Creek Rd., Proj. RS 103-322, Rowan Co., **$76,913***** from James Jessup, Depoy, reconstr. traffic bound limestone 5.776 mi., timber spans, Greenville-Russellville Rd., Proj. RS 89-643, Muhlenberg Co., **$95,451**. CD 10/9.

New Jersey—State Hy. Dpt., Trenton, rejected bids Oct. 10, constr. 1.183 mi. White Horse Ave. and S. Olden Ave., storm drain from S. Broadway to Maple Shade School and White Horse Ave. to Maddock Ave. in Hamilton Twp. Fed. Aid Secondary Projs. S-17 (4) and S-130 (1), Mercer Co., L. B. **$168,862**. Will re-advertise. CD 10/13, under LB.

▲ **New Jersey**—New Jersey Turnpike Auth., 65 Prospect St., Trenton, Oct. 31, Contr. 61, approx. 21 mi. turnpike pavement of either b. conc. or c. conc. comprising two 24 ft. wide roadways with paved shoulders and grass median strip together with pavement of Mt. Holly and Bordentown, interchanges and of drainage, gutters, curbing, topsoiling and incidental work in connection with N. J. Turnpike Sect. 3, Morristown and Allentown, Mercer and Burlington Counties, from George M. Brewster & Sons, Inc., 275 W. Fort Lee Rd., Bogota, b. conc. using F shoulders, having compacted thickness of 10-inches but to include top 3 in. course of penetration macadam, **$6,532,855**; for H shoulders having compacted thickness of 10 in. consisting of pit run grav. or crusher run stone, **$6,040,855**; intermediate G shoulders **$6,143,355**; c. conc. ranged from **$6,775,355** using H shoulders to **$6,877,855** using G shoulders and **$7,267,355** using F shoulders. CD CD 10/20.

▲ **New York**—Bureau Contracts & Accounts, Albany, Nov. 1, b. conc. Type 1 A, optional, 46.92 ft. span I-beam bridge 3.53 mi. Delhi-Bloomville, S. H. 747, Hobart-Stamford, S. H. 952, Proj. F 745 (2), F 198 (2), Contr. FARC 50-54, Delaware Co. from Torrington Constr Co., Inc., P. O. Box 336, Torrington, Conn., **$573,793**, est. $698,000***c. conc. 2.47 mi. misc. work 0.54 mi. Hy. SEP. 2 span, alpha I-beam 168 ft. Hy. SEP 4 span alpha I-beam 215 ft. interchange to the Ontario Thruway, Syracuse-Phoenix, S. H. 5274, Euclid Rd., Proj. No. U. I. 1071 (11), Contr. FAOT 50-7, FARC 50-56, FAST 5012, Oonodaga Co., from Arute Bros. Inc., 560 S. Main St., New Britain, Conn., **$842,277**, est. $931,000***b. conc. Type 2 A, opt 1.03 mi. Penn State Line-Dunkirk Pt 3, S. H. 8344, Lake Shore Dr., city of Dunkirk, Contr. No. FARC 50-55, FAC 50-12, Chautauqua Co., from Twin Village

(Continued on page 85)

Now!

New principle for backhoes provides

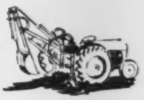
UNBELIEVABLE DIGGING POWER

It's in the New Sherman Power Digger!

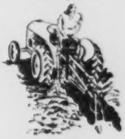
- Patented, actuated bucket gives you selective digging action, better loading, greater versatility.
- All-hydraulic action—made possible by heavy-duty hydraulic cylinders—assures efficient performance.

Specifications

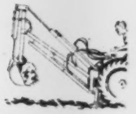
Shovel reach below ground surface	8 feet
Digger reach behind tractor	10 feet
Swinging arc	140°
Trench width, standard digging shovel, single cut	18 inches
Digging shovel capacity	3.5 cu. feet
Loading shovel capacity	5 cu. feet
Loading clearance, digging shovel, loaded	7 feet
Loading clearance, loading shovel	10 feet



- *Standard tractor mounting gives unmatched maneuverability and transportability.*



- *Digs ditches, trenches, footings, culverts, basements and other excavations.*



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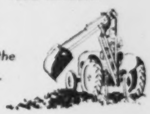
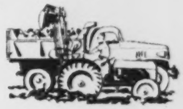


- *Works well behind the tractor at any angle.*



- *Actuated bucket raises high enough to load standard dump truck.*

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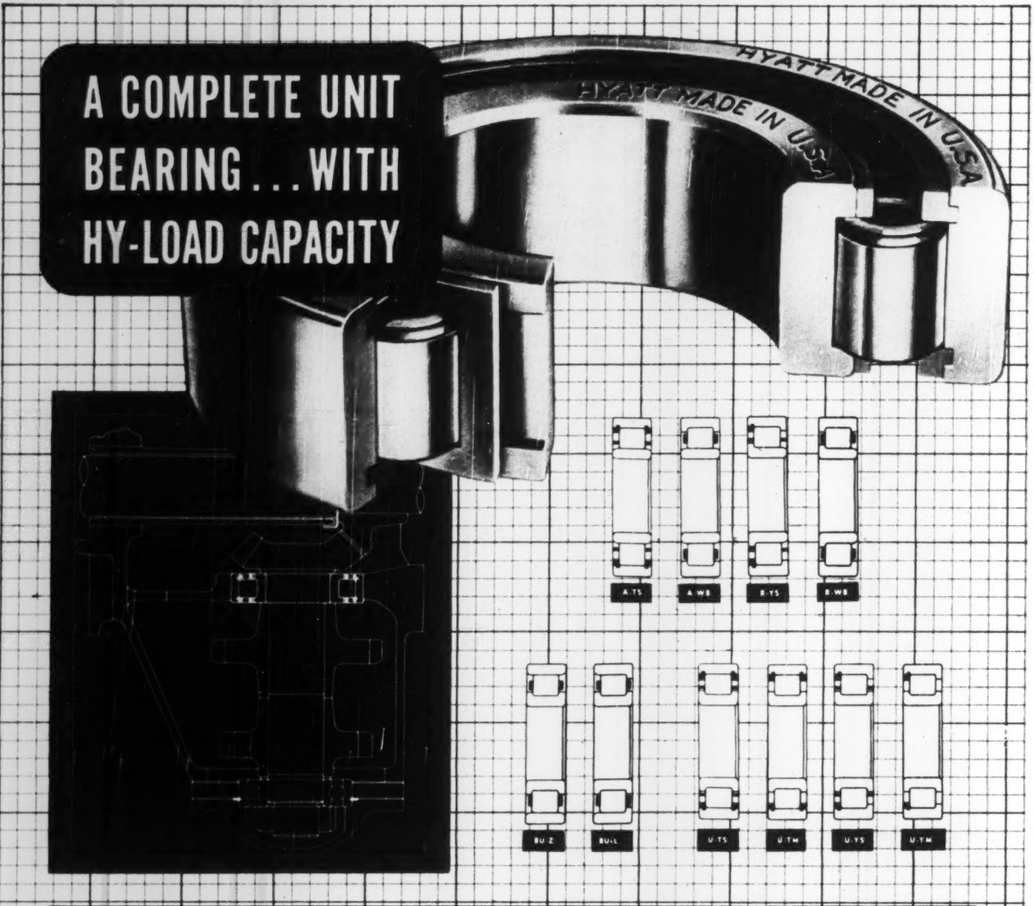

A COMPLETE UNIT BEARING . . . WITH HY-LOAD CAPACITY

HERE is a cutaway illustration and typical application of the "U-TS" type Hyatt Hy-Load straight cylindrical bearing which has rollers, separator and races assembled into a single non-separable unit. The inner race has flanges and the outer race is grooved at both ends to accommodate retainment rings. The rollers are separated and spaced by a one-piece separator.

The "U-TS" type bearing is often employed in applications where no shoulder or stop is provided to retain the outer race in an axial direction or where the bearing must be assembled as a unit.

Separable inner race, separable outer race and complete unit Hy-Load Bearings are available with varying combinations of retainment rings and flanges to fit a wide range of application requirements.

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Full information about all Hyatt Hy-Load Roller Bearings is contained in Catalog 547 . . . a complete engineering guide to radial bearing selection and use. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

HYATT ROLLER BEARINGS

(Continued from page 82)

Constr. Corp., 166 Gould Ave., Depew, **$315,013**, est. 390,000***roadside imprv. 2.97 mi. Van Wyck Expressway, Contr. 8, Proj. U 1085 (11), Contr. FA VWE 50-5, Queens Co., from Gull Contg. Co., Inc., 33-15 Lawrence, St. Flushing, **$456,945**, est. $513,000. CD 10/9.

Tex., Colorado City—City, Oct. 26, street paving, from W. L. Johnson Co., Midland, **$56,000**. Est. $50,000. Freese & Nichols, 407 Danciger Bldg., Fort Worth, engrs.

CONTRACTS AWARDED

Ga., Carrollton—Carroll Co., road grading on county bond project, to Roy Seay Greenville, **$63,870**. Bids 10/27.

Mich., Detroit—City, Carl D. Warner, comr. P. Wks., City Hall, 4,156 ft. Conner Lane and Freud Sts., to Thomas E. Currie Co., 2531 Conner St., **$90,585**. Bids 10/17. CD 10/11.

▲ **New Mexico**—State Hy. Dpt., Santa Fe, asph. processed base, single shot penetration asph. course 6.084 S. R. 199 between Miami and Springer, FAP No. S-212 (2), Colfax Co., to D. D. Skousen, 201 Springer Bldg., Albuquerque, **$86,467*****asph. processed base, bit. top course surf. 55.427 mi. S. R. Nos. 224, 311 and 277 between Field and Clovis, S. R. 89 between Weber City and Claud, FAP Nos. S-72 (2), S-76 (3) and (4), S-138 (3) and (4), Curry Co., to G. I. Martin, 520 S. Tulane St., Albuquerque, **$311,342*****asph. processed base, asph. single penetration course, 12.859 mi. S. R. 350 and 351 from Espuela west and northwest, FAP No. S-183 (1) and S-186 (1), Eddy Co., to Wylie Bros., P.O. Box 4025, Albuquerque, **$208,247*****grading, minor drainage structures, one 76.56 ft. treated timber bridge bit. top course surf. sealing with asph. and stone chips, 14.555 mi. S. R. 112 between Parkview and El Vado, FAP No. AD (1), Rio Arriba Co., to Lowdermilk Bros., Box 4150, Denver, Colo., **$233,112*****grading, minor drainage structure, two multiple concrete box culverts each over 20 ft. clear span, 2 concrete, steel bridges 508.83 ft. long and 288.80 ft. long respectively, hot plant asph. surf., sealing with asph. and stone chips, etc. 9.941 mi. U. S. 66 between Tucumcari and San Jon, FAP No. FI-127 (12), Quay Co., to Brown Contg. Co., Box 1479, Albuquerque, **$788,206*****grading, one 126.50 ft. treated timber bridge stabil. surf. course, 9.399 mi. S. R. 344 between Edgewood and Cedar Grove, FAP No. S-172 (1), Santa Fe Co., to W. T. Bookout, Box 298, Las Vegas, **$149,546**. Grand total $1,776,920. Bids 10/31. CD 10/24.

▲† **Alaska**—Alaska Road Comn., Juneau, bit. surf. 3.47 mi. Richardson Hy. from Valdez to Mile 36, to McLaughlin Constr. Co., Ford Bldg., Great Falls, Mont., **$3,790,141**. Bids 9/21. CD 9/28, under LB.

▲† **Alaska**—Alaska Road Comn., Juneau, bit. surf. 51.75 mi. Alaska Hy., Big Delta to Sears Creek, to Babler Bros. and Rogers Constr. Co., 4617 S. E. Milwaukie St., Portland, **$1,884,491**. Bids 9/30. CD 9/28, under LB.

EARTHWORK, WATERWAYS

BIDS ASKED

P. E. I. Sommerside—B.A. 11/22—Acting Secy. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., breakwater repairs, Approx. $50,000. Plans deposit $20. R. Blais, c/o owner, engr.

O., Hillsboro—B.A. About 11/23—S. O. Linzell, dir. Pub. Wks., State Depts. Bldg., Columbus, Rocky Fork, conservation dam and 2,000 acre lake near here. $650,000. CD 8/17/45.

† **Minnesota**—B.A. 11/23—U. S. Eng., 1217 U. S. P. O. and Custom House, St. Paul, Zone 1, removing section lower guard wall and repair lower guide wall, Lock and Dam 1, on right bank of Mississippi River, downstream from Ford Rd. Hy. Bridge in Minneapolis.

† **Virginia and North Carolina**—B.A. About 11/28—U. S. Eng., foot of Front St., Norfolk, Va., clearing Parcels N and P Buggs Island Reservoir Proj., Roanoke River, Serial No. CIVENG 44-110-51-15. CD 8/3/44.

† **Va., Hampton**—B.A. 12/5—U. S. Eng., foot of Front St., Norfolk, bulkhead and railing on seal walls, Kecoughtan Veterans Admin. Center.

† **Louisiana**—B.A. 11/28—U. S. Eng., foot of Prytania St., New Orleans, 127 vertical lift gates, steel, for Morganza Control Structure in Pointe Coupee Parish, CIVENG 16-047-51-60; adv. ENR 10/26.

† **Washington**—B.A. 11/28—U. S. Eng., 19 E. Poplar St., Walla Walla, channel clearing, snagging, constr. revetted levees along Touchet River in and downstream from Waitsburg, Walla Walla Co. CD 8/23/45.

LOW BIDDERS

† **Iowa**—U. S. Eng., 1709 Jackson St., Omaha, Neb., Oct. 27, flood control works adjacent to Missouri River, near Sioux City, from Pine Bluff Sand & Gravel Co., foot of Neb. St. Pine Bluff, **$292,627**.

† **Missouri and Nebraska**—U. S. Eng., 601 Davidson Bldg., Kansas City, Zone 8, Mo., cancelled bids to have been opened Nov. 2, emergency repair to levees on Missouri River, Rulo, Neb. to St. Joseph, Mo., and Nodaway River in vicinity of Maitland, Mo., CIVENG 23-028-51-41. CD 10/24.

† **North Dakota**—U. S. Eng., Bismarck, rejected bids Oct. 10, automatic pump control for Riverdale Water Supply Sys., Garrison Dam, CIVENG 32-015-51-4. CD 9/28.

† **Oregon**—U. S. Eng., Pittock Block, Portland, Ore., rejected bids Aug. 22, breakwater, at Charleston, CIVENG 35-026-51-20. CD 8/28, under LB.

CONTRACTS AWARDED

† **Arkansas**—U. S. Eng., P. O. Box 97, Memphis, 1, Tenn., constr. about 7½ mi. levees on St. Francis River near Paragould erecting 3 bridges, moving about 1,200,000 cu. yd. material in levee embankment and ditch excav., Clay and Greene Counties, Serial No. CIVENG 40-041-50-22, to The Pioneer Constr. Co., Inc., 453 Plum Ave., Memphis, Tenn., **$206,000**. CD 9/27.

AIRPORTS

† **Mass., Bedford**—AIRPORT IMPRVS.—B.A. 11/22—Civil Aeronautics Admin., Federal Bldg., New York International Airport, Idlewild, N. Y., replacing portions Instrument Landing Sys. at airport.

† **Fla., Eglin Field**—INSTRUMENT LANDING SYSTEM FACILITIES—B.A. 11/23—U. S. Eng., P. O. Box 1169, Mobile, 7, Ala., instrument landing sys. facilities, incl. concrete foundation, underground cables, 6 houses, utilities. Plans deposit $5.

PUBLIC BUILDINGS

BIDS ASKED

Tenn., Cleveland—HOSPITAL—B.A. After 11/1—T. C. Bower, chn. Bradley County Hospital Bd. at offices of Bianculli, Palm & Purnell, Architects, Inc., archt., 501 Cherry St., Chatanooga, 60-bed hospital. Plans deposit $150. CD 10/6/49.

Ill., Chicago—APARTMENTS—B.A. 11/21—Chicago Housing Auth., 608 S. Dearborn St., Zone 5, two 7 story, 74 units 30x275 ft. apartment, Archer Ave. and 23 St. $750,000. Everett F. Quinn, 134 N. LaSalle St., Zone 2, archt. CD 10/20.

Ill., Jonesboro—SCHOOL—B.A. 11/21—Community Consolidated Elementary School Dist. of Union Co., c/o Bd. Educ., Jonesboro, 1 and 2 story, 136x58 ft., and 72x23 ft. brick, school addn. Wm. B. Ittner, Inc., 408 Bd. Educ. Bldg., 911 Locust St., St. Louis, 1, Mo., archts. and engrs.

Mich., Flint—SCHOOL—B.A. 11/21—City, Bd. Educ., Joseph A. Anderson, secy., 2 story, brick, concrete Ernest W. Poter School. Plans deposit $20 refundable, Eberle M. Smith Assoc., 153 E. Elizabeth St., Detroit, archts. CD 7/21.

Minn., Mahtomedi—SCHOOL—B. A. 11/21—at Office E. D. Corwin, archt., E. 818 First National Bank Bldg., St. Paul, 1 story, part bsmnt., 58x390 ft. school, for Bd. Educ., Madeline Murray, clk. $325,000. Plans deposit $15.

N. C., Kinston—SCHOOLS—B.A. 11/21—Lenoir Co. Bd. Educ., Henry H. Bullock, supt., Kinston, 2 Negro Schools. Approx. $350,000. Wm. A. Coleman, Kinston, archt.

O., Hubbard—BUS STORAGE, etc.—B.A. 11/21—Bd. Educ., Florence Diroll, clk., High School Bldg., school bus storage and maintenance garage, Hall Ave. Plans deposit $10. Kling & Frost, 661 Wick Ave., Youngstown, archts.

R. I., Woonsocket—GYMNASIUM—B.A. 11/21—City, c/o mayors office, Woonsocket, 1 story, balcony, 74x103 ft. brick, concrete, steel gymnasium addn., to Junior High School. $500,000. Plans deposit $50. Oliver W. Fontaine, 285 Main St., archt. CD 9/22.

Ga., Dublin—SCHOOL—B.A. 11/22—Laurens Co., high school. McDonald & Co., Walton Bldg., Atlanta, archts. CD 7/4.

Mass., Brookline—HOUSING—B.A. 11/22—Town of Brookline Housing Auth., B. A. Treatman, chn., Veteran's Housing Proj. 200-1A, High and Chestnut Sts. $800,000. Plans deposit $100. Isador Richmond & Carney Goldberg, 16 Arlington St., Boston, archts. CD 7/24.

N. Y., New York—LIBRARY—B.A. 11/22—Dpt. P. Wks., Municipal Bldg., Zone 7, general contract; plumbing; heating; electrical work and lighting fixtures for alteration and rehabilitation Aguilar Branch Library, 174 E. 110 St. Plans deposit $25.

N. Y., New York—HOUSING—B. A. 11/22—New York City Housing Auth., 63 Park Row, Zone 7, foundations and appurtenances for Throggs Neck Houses (Proj. No. NY 5-15) in area bounded by E. 177 St., Balcom, Philip, Calhoun, Dewey, Swinton and Sampson Aves., Bronx Boro. Plans deposit $75. CD 10/18.

O., Apple Creek—AUDITORIUM—B.A. 11/22—Dpt. P. Wks., S. O. Linzell, dir., Ohio Dpts. Bldg., Columbus, "B" type Quonset auditorium at Apple Creek State Hospital. H. G. Allen, div. State Archt. and Engr., 705 Ohio Dpts. Bldg., Columbus, consult archt.

Va., Appomattox—SCHOOLS—B. A. 11/22—At Office J. A. Burke, school supt., Appomattox Co., Appomattox, construct Negro High and Elementary School. $300,000. Plans deposit $25. C. H. Hinnant, Lynchburg, archt.

Va., Falls Church—HIGH SCHOOL—B. A. 11/22—Falls Church School Bd., 1057 W. Broad St., 1 story, brick, steel Junior-Senior High School, Leesburg Pike and Haycock Rd. $600,000. McLeod & Ferrara, 1741 De Sales St. N.W., Wash., D. C., archts. CD 11/18/49.

W. Va., Hopemont—HOSPITAL UNIT—B.A. 11/22—State Bd. Control, Charleston, hospital unit at Hopemont Sanitarium. Plans deposit $50. Edward J. Wood & Sons, 117 S. 3 S., Clarksburg, archts. CD 6/8, under LB.

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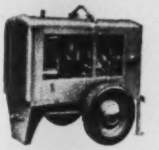

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Man., Norway House—HOSPITAL—B.A. 11/22—Acting Secy. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., hospital for Department National Health & Welfare, Indian Health Services. Approx. $300,000. Plans deposit $200. G. Brault, c/o owner, archt. CD 5/25.

N. Y., New Hyde Park—SCHOOLS—B. A. 11/24—Bd. Educ., Union Free School Dist. 9, Town of North Hempstead, 2 school bldgs. Plans deposit $50. Louis E. Jallade, 597 Fifth Ave., New York, Zone 17, archt.

N. C., Greensboro—HOUSING—B.A. About 11/25—Greensboro P. Housing Auth., Greensboro, 1 and 2 story housing, 100 building, 400 living units. C. C. Hartman, 120 Jefferson Standard Bldg., archt. CD 1/26.

Ky., Henderson—SCHOOL—B. A. 11/25—Henderson Co. Bd. Educ., 2 story, steel, concrete, brick veneer school, $650,000, Geo. F. Mahoney, Columbian Mutual Tower Bldg., Memphis, Tenn., archt. Frank Tobey, Jr., Fall Bldg., Memphis, Tenn., struct. engr. Griffith C. Burr, Dermon Bldg., Memphis, Tenn., mech. engr. Wm. Thompson, 198 S. Main St., Memphis, Tenn., electrical engr. CD 12/13/49.

▲ **N. J., New Brunswick**—HOUSING—B.A. 11/27—Housing Auth., New Brunswick, 200-unit low-cost public housing, Van Dyke Ave., $2,403,294. CD 11/30/49.

† **Wash., Richland**—HOUSING—B.A. 11/27—Atomic Energy Comn., Richland, 300 housing units. $3,000,000. CD 8/26.

Calif., Davis—HOME ECONOMICS—B. A. 11/28—Bd. Regents, University of California, Berkeley, (1) general contract (2) heating and ventilating, plumbing (4) electrical work and (5) elevators for 2 story I-shaped, 45,000 sq. ft., rein.-con. Home Economics Bldg. with attached auditorium. Plans deposit $50. Hervey P. Clark & John F. Buettler, 210 Post St., San Francisco archts. H. J. Brunner, Sharon Bldg., San Francisco, engr.

Calif., Imola—RECEIVING and TREATMENT UNIT—B.A. 11/28—State Div. Architecture, P. Wks. Bldg., Sacramento, (1) general contract (2) electrical work (3) plumbing (4) heating ventilating and refrigeration 2 story, part bsmnt., 206,000 sq. ft., rein.-con. receiving and treatment unit at Napa State Hospital. Plans deposit $75. Anson Boyd, Sacramento, state archt. CD 10/23.

Fla., Sanford—HOUSING—B.A. 11/28—Sanford Housing Auth., c/o Elton J. Moughton, Sanford, 125 housing units. Extended date. CD 10/18.

Calif., Rio Dell—SCHOOL—B.A. 11/29—Rio Dell Union Elementary School Dist., Rio Dell, wood frame school. Approx. $250,000. Plans deposit $25. Ernest Fredrick, 251 Post St., San Francisco, archt.

Calif., Sunnyvale—SCHOOL—B.A. 11/30—Sunnyvale Elementary School Dist., Sunnyvale, rein.-con. school 1st unit, on Postario Ave. $350,000. Plans deposit $40. Donald Powers Smith, 583 Market St., San Francisco, archt.

Miss., Hattiesburg—DORMITORY—B.A. about 12/1—State Bldg. Comn., New Capitol Bldg., Jackson, dormitory and stadium at Mississippi Southern College. $250,000. Landry & Matthes, Hattiesburg, archts. CD 6/30/47.

Va., Staunton—RECREATION—B.A. 12/12—State of Virginia, Richmond, recreation bldg. at Virginia School for Deaf and Blind. $300,000. Walford & Wright, 103 E. Cary St., Richmond, archts. CD 10/11/44.

Ga., Albany—HOUSING—B.A. About 12/15—Albany Housing Auth., 716 Society Ave., 125 housing units for whites. CD 11/22.

LOW BIDDERS

▲ **Conn., Bridgeport**—SCHOOL—State, R. S. Thatcher, comptroller, State Office, Hartford, Oct. 30, Bullard Havens Technical School B/A-A-75 from E & F Constr. Co., 94 Wells St., **$1,398,000.** CD 10/9.

▲ **Fla., Tallahassee**—SANITARIUM—State B. Control, Tallahassee, Nov. 1, main hospital and heating plant of W. T. Edwards Tuberculosis Sanitorium, from Beers Constr. Co., 70 Ellis St. N.E., Atlanta, Ga., **$1,111,111;** plumbing, heating and air conditioning services from L. W. Henderson, 420 E. Gadsden St., Pensacola, **$341,180.** CD 9/22.

Mass., Randolph—SCHOOL—Town, C. W. Freeman, chn., Oct. 27, Junior Senior High School, N. Main St., from Hayes & Watkins Constr. Co., 12 Cottage St., Brockton, **$980,256.** CD 10/12.

N. Y., Peekskill—HOUSING—Housing Auth., Municipal Bldg., Main St., Oct. 24, Dunbar Heights Housing Proj. N. Y. S-47, from Stewart M. Muller, Inc., 47 S. Riverside Ave., Croton-on-Hudson, **$878,250.** CD 10/18.

▲† **O., Cincinnati**—RESEARCH CENTER—Pub. Bldgs. Admin., 18 and F Sts., N.W. Wash. 25, D. C., New National Center for water pollution research, from Grove Shepherd, Wilson & Kruge, Inc., 247 Park Ave., New York, N. Y. **$3,862,750.** CD 9/27.

O., Dayton—SCHOOL—Bd. Educ., Van Buren Twp. School Dist., Dayton, Oct. 26, general contract 20-room school in Van Buren Twp., from J. I. Barnes Constr. Co., 131 N. Ludlow St., **$624,400.** CD 10/6.

Pa., Dixmont—BOILER PLANT, etc.—General State Auth., 18 and Herr Sts., Harrisburg, Nov. 1, (a) general contract (b) heating (1) boiler plant (2) tunnel and steam distr. sys., at Dixmont State Hospital, (a1) from Clement Martin, Inc., 1831 Murray Ave., Pittsburgh, **$384,550*****from Wayne Crouse, Inc., 245 N. Neville St., Pittsburgh, (b1) **$261,161** (b2) **$121,881*****from Joseph Skilken & Co., 499 N. Cassidy St., Columbus, O., (a2) **$224,513.** CD 10/18.

Pa., Edinboro—DORMITORIES—General State Auth., 18 and Herr Sts., Harrisburg, general contract men's dormitory and women's dormitory at Edinboro State Teachers College from Matthew Leivo & Sons, Inc., New Castle, **$548,000.** CD 10/18.

▲ **R. I., Kingston**—GYMNASIUM, etc.—State of Rhode Island, F. A. Adams, purch. agt., State House, Providence, Oct. 16, gymnasium and armory, R. I. State College, from E. Turgeon Constr. Co., Inc., 42 Weybossett St., Providence, **$1,159,965.** Oresto DiSaia, 703 Gardner Bldg., Providence, archt.

▲ **Tex., Amarillo**—HOSPITAL—Potter Co., E. E. Jordan, judge, Amarillo, Oct. 30, 5 story Northwest Texas Hospital addn., rein.-con. with nurses home addn., boiler plant, shop and laundry, from Lembke Constr. Co., Albuquerque, N. Mex., **$1,557,954.** Est. $1,000,000. CD 10/3.

Tex., Lubbock—POWER PLANT—City, Oct. 19, power plant project, boiler plant unit only, from Tennant Co., Gulf Bldg., Houston, **$149,152*****generating unit, from Brown, Boveri Corp., 19 Rector St., New York, N. Y., **$245,000*****condenser unit, from Westinghouse Electric Corp., 1314 Texas Ave., Houston, **$69,285.** G. K. Harris, city engr.

B. C., Kelowna—HOSPITAL—Kelowna Hospital Bd., Kelowna, 3 story, rein.-con. hospital addn. with attached boiler house and laundry, from Dominion Constr. Co. Ltd., 150 W. 1 Ave., Vancouver, **$596,188.** CD 9/19.

CONTRACTS AWARDED

Calif., Montebello—SCHOOL—Montebello Unified School Dist., 123 S. Montebello Blvd., Montebello Senior High School, to W. J. Disteli, 4814 W. Jefferson Blvd., Los Angeles, **$555,400.** Est. $500,000. Bids 10/24. CD 11/2, under LB.

Ga., Albany—HOUSING—Albany Housing Auth., 716 Society Ave., Albany, Proj. GA-23-4, 125 housing units, to Byck Worell Constr. Co., 318 E. Bay St., Savannah, **$847,000.** Bids 10/10. CD 10/17. Under LB.

† **Idaho, Arco**—SUB-STATION CONTROL HOUSE—Idaho Operations Office, Atomic Energy Comn., Idaho Falls, one 30x50 ft. and two 30x60 ft., rein.-con. electrical sub-station control houses, AT (10-1)-144, to J. K. Thayn, 2670 Berkeley St., Salt Lake City, Utah. **$91,600.** Bids 929.

▲† **Ill., Lemont**—BIOLOGY—U. S. Atomic Energy Comn., Argonne National Laboratory, Downers Grove, 3 story, bsmnt., biology bldg., to S. N. Nielsen, 3059 W. Augusta Blvd., Chicago, Zone 22. **$3,999,000.** Bids 10/3, awarded 10/27. CD 10/24, under LB.

Md., Brunswick—SCHOOL—Bd. Educ. of Frederick Co., 105 E. Church St., Frederick, general contract 1 story, 58x203 ft., 75x90 ft., and 58x191 ft., brick, steel, concrete block school, to A. R. Warner & Sons, Waynesboro. **$408,000.** Paul H. Kea, Professional Bldg., Hyattsville, archt. James Posey, 10 E. Pleasant St., Baltimore, consult. engr. CD 4/10.

▲ **Pa., Altoona**—HOSPITAL—Inst. Dist. of Blair Co., Court House, Hollidaysburg, 1, 2 and 3 story, bsmnt., brick county home hospital, to Moyer Bros., 2605 Beale Ave., **$1,090,304.** CD 10/18, under LB.

S. C., Spartanburg—HOUSING—Spartanburg Housing Auth., Vanderbilt Rd., Proj. (SC 3-3) 100 housing units to McKoy-Helgerson Co., 320 S. Hudson St., Greenville, **$919,000.** Bids 10/25. CD 10/30, under LB.

▲ **N. B., Moncton**—HOSPITAL UNIT—Moncton Hospital Bd., Moncton, 200-bed hospital unit, to George Hardy Ltd., 163 Wicksteed Ave., Toronto, Ont., **$2,141,744.** Bids 10/16. CD 11/1, under LB.

Ont., Milton—HOME FOR AGED—Halton Co., Wm. Deans, clk., home for aged, 4 L-shaped wings of various sizes, to James Kemp Constr. Co. 121 Vansitmart St., Hamilton. Approx. **$250,000.** Bids 10/9, awarded 10/30. CD 5/15.

COMMERCIAL BUILDINGS

BIDS ASKED

Tenn., Oak Ridge—CHURCH—B.A. 11/27—First Baptist Church, c/o Edwin A. Keeble, archt., Cotton States Bldg., Nashville, church. Approx. $250,000. Extended date. CD 10/27.

Tex., Brownsville—OFFICE—B.A. 11/28—Amex Cotton Co., 413 W. 7 St., 5 story cotton exchange office. $250,000. C. Lyman Ellis & Co., 110 McClendon Bldg., Harlingen, archts. CD 10/23.

Tex., Corpus Christi—HOSPITAL—B.A. 11/28—Spohn Hospital, c/o Mother Benjamin, 1436 Third St., 5 story, steel, brick, stone hospital addn. $600,000. Wade, Gibson & Martin, Prof. Bldg., archts. CD 11/11/49.

SOON LETS CONTRACT

Ala., Sylacauga—CHURCH—First Methodist Church c/o A. H. Fink, archt., 1701 Arch St., Phila., Pa., soon lets contract church. CD 10/27.

LOW BIDDERS

Tex., El Paso—CHURCH, etc.—First Christian Church, 500 N. Oregon St., Oct. 27, church, educational, auditorium, from Robert E. McKee, General Contractor, Inc., Box 562, **$287,700.** CD 10/24.

CONTRACTS AWARDED

Calif., Glendale—STORE—S. H. Kress, 114 5 Ave., New York, N. Y., 69x150 ft., concrete store, to Lindgrens & Swinerton 605 W. Olympic Blvd., Los Angeles, **$275,000.**

Fla., Jacksonville—HOMES—Lawrence C. Pearce Co., 4201 Kings Ave., Zone 7, 50 moderate priced homes in Chaseville-Arlington Suburban section. Owner builds, **$300,000.**

▲ **Ill., Chicago**—APARTMENTS—Dpt. of Army, Fifth Army, 1660 E. Hyde Park Blvd., construct, manage and finance two 252 units, 22 story each, concrete, brick apartments to Herbert S. Greenwald and Samuel Katzen, Leif Eriksen Dr. and 50 St., Zone 15, **$2,400,000.** Sponsor taking bids for construction. CD 11/18/49.

Ia., Des Moines—DWELLINGS—Winegardener Bros. Inc., 48 and Douglas Ave., 45 single dwellings. Owner builds, **$450,000.**

▲ **Md., Baltimore**—HOSPITAL—Associated Jewish Charities, Monument and Eutaw Sts., 2 story, bsmnt., 44x230 ft. and 44x57 ft., brick, steel, limestone T-shaped hospital for Pulmonary Diseases, Belvedere and Greenspring Aves., to John K. Ruff, Inc., 100 W. 22 St., **$1,082,400.** Est. $750,000. CD 10/12, under LB.

Md., Baltimore—CHURCH—St. Anthony of Padua Church, 4414 Frankford Ave., 80x151 ft., brick, concrete, steel church, 4440 Frankford Ave., to E. Eyring & Sons Co., 800 S. Conkling St. Bids 10/24. CD 10/12.

Mich., East Lansing—CHURCH—First Church of Christ Scientists, 314 M A C, East Lansing, 1 and 2 story, bsmnt., stone church, Haslett St. and East Grand River Ave., to Foster-Schermerhorn-Foster, 701 S. Holmes St., Lansing, **$350,000.** Charles D. Faulkner, 307 N. Michigan St., Chicago, Ill., and Herrick & Simpson Assoc., 1005 Bauch Bldg., Lansing, archts.

N. Y., New York—HOME, etc.—Francis Schervier Home & Hospital, 227 St. and Independence Ave., to Skinner & Cook, Inc., 60 E. 42 St., Zone 17. Approx. **$750,000.** Voorhees, Walker, Foley & Smith, 101 Park Ave., Zone 17, archts. CD 10/5.

Pa., Turtle Creek—MOTEL, ADMINISTRATION, etc.—Tourinns, Inc., 60 E. 42 St., New York, N. Y., motel, administration bldg., service station, Route 22, Patton Twp., near here, to Wm. Crawford, Inc., 7 E. 42 St., New York, N. Y., **$300,000.** M. Duncan, Harwood Bldg., Scarsdale, N. Y., archt.

Tex., Houston—OFFICE—National Lead Co., Barold Sales Div., City Natl. Bank Bldg., 38,000 sq. ft. office, to Walter Kidde Constructors, Inc., 4101 San Jacinto St., **$685,000.** CD 11/2, under LB.

Wash., Seattle—HOUSES—Modern Home Builders, Inc., 3849 34 Ave. W, 33 houses, W. Andover and Charlestown Sts. and 49 and 50 Aves. SW, day labor, **$254,800.** CD 10/31.

▲ **Ont., Mimico (Toronto)**—HOUSING—A. E. Longo, 6 Lytton Blvd., 280-suite garden court apartment, Lake Shore Rd., own forces. **$1,200,000.** A. Tobias, 269 College St., Toronto, engr. CD 11/3.

INDUSTRIAL BUILDINGS

BIDS ASKED

Mich., Carrollton — WAREHOUSE, etc. — Bids Asked — Kretschman Corp., Carrollton, 1 and 2 story, brick, concrete warehouse and office, Maple St. $80,000. Frederick E. Wigen, 507 Weichmann Bldg., Saginaw, archt.

Mich., Detroit — PLANT — Bids Asked — Daily Grinding Co., 5633 Sixteenth St., 1 story, brick, masonry machine shop plant, $68,000, Economy Design & Drafting Service, 2737 W. Grand Blvd., archt.

SOON LETS CONTRACT

Pa., Pittsburgh—WAREHOUSE—H. Childs & Co., Inc., 813 Penn Ave., soon lets contract 100x150 ft. brick, block, steel frame warehouse, 1205 Madison Ave. $150,000. Paul Schell, 1112 Clark Bldg., archt.

Ont., New Toronto—PLANT—Mathers & Haldenby, archts, 15 St. Mary St., Toronto, soon lets contract plant addn., for Dominion Colour Corp. Ltd., 7 Eighth St. CD 12/6/46.

LOW BIDDERS

Tex., Dallas—STORAGE—The Ruberoid Co., Harrys Rd. and Singleton Blvd., roofing machinery and dry felt storage, from Trinity River Constr. Co., 1708 Cedar Springs Rd., **$93,000.** CD 10/27.

CONTRACTS AWARDED

Calif., San Bernardino—WAREHOUSE, etc.—Crane Co., 321 E. 3 St., Los Angeles, 22,000 sq. ft., steel warehouse and office to E. F. Gladding, 640 S. Olive St., Fontana, **$118,674.** Bids 10/19. Wm. F. Mellin, 671 D St., archt.

Fla., Jacksonville — INDUSTRIAL — Jacksonville Sludge Removal Co. c/o Merrill-Stevens Co., 644 Bay St., industrial bldg. on waterfront near Georgia Ave. Owner builds **$200,000.**

Ill., Chicago—LABORATORY, etc.—Tuttle & Kift, 1835 N. Monitor St., Zone 39, 1 and part 2 story, 25,000 sq. ft., laboratory and offices, to Campbell-Lowrie-Lautermilch, 400 W. Madison St., Zone 6, **$180,000.** Olsen & Urbain, 5 S. Wabash St., Zone 3, archts. Awarded 8/24.

Ill., Chicago—LABORATORY—Witco Chemical Co., 51 and Moody Sts., 1 story, brick, concrete, steel laboratory, near here, to Ragnar Benson, Inc., 4744 W. Rice St., Zone 51, **$75,000.** Awarded 10/25. CD 9/21.

▲ **Ill., Ottawa**—TANK FURNACE—Libbey-Owens-Ford Glass Co, Nicholas Bldg., Toledo, O., tank furnace for making plate glass blanks, to A. Bentley & Sons Co., 201 Belmont St., Toledo, O. Approx. **$3,000,000.** Wm. Hasselbach, Technical Bldg., E. Broadway, Toledo, O., ch. engr. for owner.

Ill., Peoria—GRAIN ELEVATOR—National Distillery Co., Crowell and Erie Sts., 80 ft. high bins grain elevator, to Sanderson & Porter, 11 S. LaSalle St., Chicago, Zone 3, **$600,000.** Awarded 10/24. CD 10/6.

Ind., Peru—LOCOMOTIVE SHOP—Chesapeake & Ohio R. R., L. T. Nuckols, ch. engr., 823 E. Main St., Richmond 10, Va., diesel locomotive shop, to J. N. Nielsen Co., 3059 Augusta Blvd., Chicago 22, Ill., **$900,000.** Awarded 10/23

Mich., Detroit—AUTO SALES SERVICE GARAGE—Hussack Brothers, Inc., 8124 Michigan Ave., 1 story, 95x128 ft., brick, concrete auto sales service garage, Michigan Ave., to John Compo, 135 E. Grixdal St., **$70,000,** Economy Design & Drafting Service, 2737 W. Grand Blvd., archt.

Pa., Pittsburgh—OPEN HEARTH PUMP HOUSE—Jones & Laughlin Steel Corp., 3 and Ross Sts., 1 story, 45x148 ft. block, No. 4, Open Hearth Pump House, South Side Works to Dravo Corp., Neville Island, Approx. **$100,000.** Bids 9/28. CD 10/3.

Tex., Irving—PLANT—Texas Panacalite Co., c/o S. W. Johnson, Irving, processing plant, own forces. Approx. **$100,000.** CD 7/10.

UNCLASSIFIED

BIDS ASKED

† **Arkansas and Missouri**—RELOCATE CEMETERIES—B.A. About 11/21—U. S. Eng., 300 Broadway, Little Rock, Ark., relocate 7 cemeteries in Bull Shoals Reservoir area in Boone Co., Ark., Taney Co., Mo. CIVENG-03-050-51-21 and 22.

† **D. C., Wash.**—TRANSFORMER SUB-STATION—B.A. 11/21—U. S. Eng., First and Douglas Sts., N. W., Zone 25, transformer sub-station and misc. electrical work, beach erosion board, 5201 Little Falls Rd. N. W., Serial No. CIVENG 49-080-51-28.

Texas—RURAL DISTRIBUTION LINES—B.A. 11/27——Cook County Electric Co-operative, Muenster, 20 mi. 33 kw. transmission lines, 2 sub-stations, Cook Co. $100,000. Plans deposit $25. Eng. Dpt. of Brazos River Transmission Electric Co-operative, 902 Amicable Bldg., Waco, engr.

† **California**—TURBINES—B.A. 11/30—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., turbines for Folsom Power Plant, Central Valley Proj. Spec. 3197. Extended date. L. N. McClellan, ch. engr.

† **Wash., Whittier**—PLATFORM, etc.—B.A. 11/30—U. S. Eng. Anchorage, Alaska, platform, ramp, gangway and pontoon float to existing wharf facilities, Inv. S95-507-51-21. Plans deposit $25.

† **Alaska, Whittier**—SPRINKLER SYSTEM—B.A. 11/30—U. S. Eng., (APO 942, c/o PF, Stattle, Wash.) Anchorage, installing complete automatic sprinkler sys. in Intransit warehouuse, Inv. No. S95-507-51-12. Plans deposit $25.

LOW BIDDERS

O., Toledo—HEATING PLANTS—City, City Hall, Oct. 31, install heating plants in zoo buildings, from Dan McDermid, 1610 Cherry St., **$124,916.** Est. $112,000. CD 10/25.

† **Oregon**—TRACK—U. S. Eng., Pittock Block, Portland, rejected bids Sept. 21, track on Southern Pacific R. R., location upstream from Lowell, CIVENG 35-026-51-26. Will re-advertise. CD 9/28, under LB.

Tex., Amarillo—SWIMMING POOL, etc.—City, project indefinitely postponed, swimming pool and bathhouse. **$150,000.** CD 10/10.

Tex., Texas City—SWIMMING POOLS—City, Oct. 25, rein.-con. swimming pool, 5 Ave. N. and 17 st., from Texas Gulf Constr. Co., 2008 S. Wayside Dr., Houston, **$175,000,** est. $100,000***rein.-con. swimming pool between 3 and 4 Ave. south from Thomas J. Evans, Jr., 902 State St., South Houston, **$93,289,** est. $75,000. CD 10/13.

CONTRACTS AWARDED

Illinois—RURAL DISTRIBUTION LINES—Western Illinois Co-operative, Inc., L. C. Marcel, mgr., SE corner of Square Carthage, 45 mi. rural distr. lines 39 mi. lines and other sys. imprvs., Hancock Co., own forces. **$339,000.** CD 10/20.

▲ **Missouri** — GAS PIPE LINES — Missouri Central Natural Gas Co., Macon, 60 mi. gas pipe lines in Macon, Clarence, Shelbina and Monroe City. Owner builds. **$1,200,000.**

Nebraska—RURAL DISTRIBUTION LINES—Cornhusker Rural Public Power Dist., Columbus, 235.3 mi. rural distr. lines, Antelope, Boone, Greeley, Nance and Wheeler Counties, to Emil Dubsky, Wayne, **$252,764.** Bids 10/30. CD 10/11.

▲ **N. S., Halifax**—TRANSIT SHEDS—National Harbors Bd., West Block, Ottawa, Ont., Transit Sheds 3 N and 3S Pier 3, D.N.T., to E. G. M. Cape & Co., 620 Cathcart St., Montreal, Que., Approx. **$1,110,184.** Bids 10/31. CD 9/22.

▲ **Que., Quebec City**—UNDERGROUND SERVICE TUNNELS, etc.—Laval University, 6 University Ave., underground service tunnels, about 2 mi. and installing telephone, electric, radio, etc. services at site of new University, St. Foye, to Komo Constr. Ltd., 1500 St. Vallier St., Approx. **$1,500,000.** CD 1/2/48, under Commercial Buildings.

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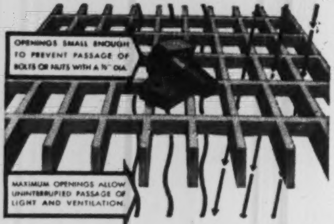
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PROPOSED PROJECTS

WATER SUPPLY

▲ **Fla., Panama City**—City, WW imprvs. and sanitary sewerage sys. **$3,500,000.** Smith & Gillespie, Roberts Bldg., Jacksonville, engrs. CD 11/17/49.

Ill., McLeansboro—City, Frank Glenn, clk., W W imprvs. incl. raising spillway, raising S.B. 1, Route 14, revise and rebuild water filtration plant and water lines, sewerage sys. imprvs., incl. sewage disposal plant and exten. present sewers, **$200,000-$260,000.** Crawford, Murphy & Tilly, 400½ E. Adams St., Springfield, consult. engr.

Ia., Sioux City—City, C. A. Norrbom, clk., conduit exten. **$120,000.** K. C. Gaynor, City Hall, city engr.

▲ **Mich., Bay City**—City, George MacPhail, mgr., City Hall, 4 mi. water intake Saginaw Bay, **$2,100,000,** Francis Eng. Co., 303 Eddy Bldg., Saginaw, consult. engr. CD 12/10/45.

Mich., Carrollton—Carrollton Twp., P. Wks., water sys., $58,500 ft. water mains, filtering plant, etc. **$265,000.** Francis Eng. Co., 303-4 Eddy Bldg., Saginaw, consult. engr.

Mich., Linwood—Linwood Metropolitan Water Dist., water sys., water mains to take water from Saginaw and Bay City, **$100,000.** Francis Eng. Co., 303-4 Eddy Bldg., Saginaw, consult. engr.

Mich., Saginaw—City, Water Bd., water sys., water mains, distr. lines and filtering facilities. **$900,000.** Francis Eng. Co., 303-4 Eddy Bldg., consult. engr.

Tex., Grand Prairie—City, voted bonds Oct. 25, WW imprvs., exclusive of well, incl. 500,000-gal. steel tank, **$150,000.** G. H. Turner, City Hall, city engr.

Tex., San Marcos—City, voted bonds, water main and distr. lines exten. **$150,000.** Frank T. Drought, 117 W. Pecan St., San Antonio, consult. engr. CD 10/16.

SEWERS, WASTE DISPOSAL

▲ **Fla., Tallahassee**—City, imprv., exten. city sewer and storm drainage sys. **$1,000,000.** Smith & Gillespie, Roberts Bldg., Jacksonville, Zone 1, consult. engrs.

Ill., Galena—City, Irene Meller, clk., City Hall, sewerage facilities, treatment plant, etc. **$229,450.** Beling Eng. Consultants, c/o City Hall, engrs. CD 8/10.

Ill., Morton—Village, Village Hall, sewage disposal works, **$250,000.** Crenshaw & Jost, 512 Court St., Peoria, consult. engrs.

▲ **Ia., Mason City**—Bd. Supervs., Cerro Gordo Co., Mason City, sewage disposal sys. for towns of Clear Lake and Ventura. **$1,185,000.**

▲ **Md., Salisbury**—Comrs., Wicomico Co. Court House, sewerage sys. to serve Southern suburbs of Salisbury, exten. beyond Fruitland and Shad Point, approx. 43 mi. of sewers to tie into present municipal lines and disposal plant, **$1,500,000.** Clarke Gardner & Assoc., Salisbury, consult. engrs.

Mich., Marysville—City, City Comn., City Hall, bond election Jan. 17, sewage disposal plant, treatment facilities, **$700,000.**

Minn., Hibbing—Village, G. J. Grady, Jr., clk., $765,000 bond election Nov. 24, storm sanitary and interceptor sewers **$650,000;** sewage disposal plant repairs **$100,000.** Banister Eng. Co., 1549 University Ave., St. Paul, consult. engr. CD 6/22.

Minn., Hollandale—Village, H. Henderson, clk., complete sanitary sewerage sys. and lift station, **$150,000.** E. G. Briggs, 2360 University Ave., St. Paul, consult. engr.

Tex., San Marcos—City, voted bonds, removing sewage disposal plant and rebuilding, **$200,000;** sewage lift station, sewer collection lines, **$200,000.** Frank T. Drought, 117 W. Pecan St., San Antonio, consult. engr. CD 10/16.

Va., Gordonsville—Town, sanitary sewerage sys. **$185,000.** R. Stuart Royer & Assoc., Virginia Bldg., Richmond, engrs. CD 3/5/46.

Va., Harrisonburg—City, sewage treatment plant. **$600,000.** R. Stuart Royer & Assoc., Virginia Bldg., Richmond, engrs. CD 2/17/47.

BRIDGES

Fla., Ormond—Ormond Special Road & Bridge Dist. of Volusia Co., Deland, steel bridge across the Halifax River connecting Ormond and Ormond Beach. **$800,000.** (**Correction**—Russell & Axon, Daytona Beach, not engineers). CD 10/4.

▲ **Mich., Lansing**—City, Mayor Ralph W. Crego, City Hall, steel, concrete bridge, super span over Grand River and number of streets at Ottawa St. **$1,750,000,** Glen Manz, City Hall, engr.

▲ **Ore., The Dalles**—Wasco Co., Court House, 1,468 ft. bridge across Columbia River at Covington Point, near here, **$2,400,000.** Tudor Eng. Co., 681 Market St., San Francisco, Calif., consult. engr. Christ Fauerso, Court House, owner's staff engr.

STREETS AND ROADS

Ariz., Phoenix—City, City Hall, 1 Ave. and Washington St., wid'n. 10 block stretch of Osborn Rd., from 16 to 45 feet, installing curbs and sidewalks, **$166,000.** R. Bail Baker, City Hall, city engr. CD 4/18/49.

Mich., Iron Mountain—City, City Counucil, City Hall, bit., c. conc. road work on various sections, **$300,000.** CD 11/17/44.

Mich., Mason—Comrs., Ingham Co. County Rd. Comrs., Mason, new roads **$150,000,** bridges **$40,000,** repairs, maintenance work. **$400,000.** Frank Evans, Mason, co. engr.

Neb., Omaha—Douglas Co., Omaha, blacktopping Road 92 west of Waterloo. **$150,000.** L. E. Adams, co. engr. CD 2/6.

EARTHWORK, WATERWAYS

▲ **Tex., Fort Worth**—Tarrant County Water Control & Imprvt. Dist. 1, Joe B. Hogsett, pres., Danciger Bldg., voted bonds, flood control program (Program B). **$7,000,000.** Freese & Nichols, 407 Danciger Bldg., engrs. CD 9/12.

▲† **Washington**—U. S. Eng., 19 E. Poplar St., Walla Walla, wid'n. Palouse River Channel and Missouri Flats Creek, Pullman. **$1,205,000.**

▲† **Washington**—U. S. Eng., 19 E. Poplar St., Walla Walla, 9 mi. levees along Columbia River at Pasco **$3,000,000;** 8 mi. at Kennewick, **$4,000,000.** CD 2/18/44.

AIRPORTS

O., Toledo—AIRPORT—City, Arnold V. Finch, mgr., airport imprvs. **$200,000.** John H. Davis, city engr.

LATIN AMERICA

Chili, Cerro Manantiales—Corporacion de Fomento, Santiago, plans crude-oil stabilization and light hydrocarbons recovery plant. **$2,750,000.**

Mexico—State Government, Palacio del Estado, Guadalajara, Jal., Mexico, plans c. conc., street paving. **$10,410,000.**

Mexico, Jalapa — Municipal Glvt., Palacio Municipal, Jalapa, plans WW. **$1,200,000.** CD 1/2/46.

Mexico, Mexico City—Guillermo Garza Benitez-Lic. Jorge Gurria, Acroix, rep., Pino, 96, Mexico City, plans steel tubes connections factory, **$250,000.**

Mexico, Mexico City—L. N. T., Plaza de la Republica, 53, Mexico City, plans freight truck terminal. **$1,200,000.**

San Salvador, El Salvador—Owner, c/o Fred E. Hess, engr., For Worth Natl. Bank Bldg., Fort Worth, Tex., U. S. A, plans 6 story hotel. **$3,000,000.**

PUBLIC BUILDINGS

▲ **Calif., Castro Valley**—SCHOOLS—Castro Valley Elementary School Dist., 7531 Castro Valley Blvd., plans by Miller & Warnecke, 507 Howard St., San Francisco, 4 schools, **$1,600,000.**

▲ **Calif., Compton**—SCHOOLS—Compton Union High School & Junior College Dist., 601 S. Acacia St., voted **$7,100,000** bonds Oct. 20, schools. CD 10/10.

Calif., Culver City—GYMNASIUM, etc.—Culver City Unified School Dist., Culver City, plans by Daniel, Mann, Johnson, 672 S. Lafayette Park Pl., Los Angeles, steel gymnasium **$250,000,** 56x75 ft., rein.-con., gunite swimming pool and pool equipment at Culver City High School, **$70,000.** CD 4/8/49.

Calif., Fortuna—SCHOOL—Fortuna Union Elementary School Dist., Fortuna, school, **$295,900.**

Calif., Livingston—SCHOOL—Livingston Union Elementary School Dist., Livingston, plans by Frank Wynkoop, 1638 Market St., San Francisco, school, **$500,000.** CD 10/26.

▲ **Calif., Mendota**—SCHOOLS—Mendota Union School Dist., Mendota, 3 schools. **$1,162,800.**

Conn., Middlebury—SCHOOL—Town Bd. Educ., Middlebury, plans by Carl J. Malmfeldt & Assocs., 36 Pearl St., Hartford, 1 story, masonry school. **$600,000.**

Conn., Waterford—SCHOOL—Town, School Bldg. Comn., Town Hall, plans by Payne & Keefe, 231 State St., New London, masonry school. **$600,000.**

Fla., St. Petersburg—HEALTH CENTER—Bd. Comrs., Pinellas Co., Clearwater, plans by Guy C. Fulton Assocs., state archts., Tallahassee, health center, near here. **$300,000.**

▲ **Ill., Chicago**—EXPERIMENT STATION etc.—University of Illinois, Urbana, plans by C. Herrick Hammod, State Armory, Springfield, drug plant experiment station, **$570,000;** nurses residence and school, **$2,100,000;** East Dentistry-Medicine-Pharmacy Bldg., **$6,340,000;** experimental research bldg., **$1,300,000;** student and staff housing **$1,000,000;** second and third stages of hospital alterations and remodeling hospital facilities, **$2,000,000;** remodeling, impv. buildings, grounds and utilities **$365,000.**

Ia., Council Bluffs—SCHOOL—Independent School Dist., **$615,000** bond election Nov. 20, school Second Ave. Dist. G. B. Larson, 305 W. Broadway, archt. CD 1/6.

Kan., Derby—SCHOOL—Bd. Educ., Derby, plans by Hibbs & Robinson, 519 S. Broadway, Wichita, high school, **$367,000.**

▲ **Kan., Lawrence**—SCIENCE—State Bd. Regents, Topeka, plans by C. L. Marshall, state archt., Topeka, science bldg. at University of Kansas. **$1,972,000.**

Ky., Lakeland—HOSPITAL—Commonwealth of Ky., New State Office Bldg., Frankfort, tuberculosis hospital for Central State Hospital, Lakeland, **$750,000.**

Ky., Louisville—HEATING PLANT—University Medical Center, 101 West Chestnut St., plans by Joseph & Joseph, Speed Bldg., Zone 2, central heating plant to serve 3 hospitals, coal **$832,838,** gas and coal **$843,428,** E. R. Ronald & Assoc., 554 S. Third St., Zone 2, consult. engrs.

La., Franklinton—SCHOOL—Washington Parish School Bd., Franklinton, bond election Dec. 5, school imprvs. **$757,000.**

Md., Baltimore—FIRE HOUSE—City, Bureau Bldg. Constr., 410 Municipal Bldg., Zone 2, plans by A. C. Radziszewski, 20 E. Lexington St., Zone 2, 2 story, part bsmnt., 54x95 ft. brick, steel Fire House 61, Arlington Ave. and Cold Spring Lane, **$325,000,** Kubitz & Koenig, 202 Emerson Tower Bldg., struct. engrs. Jas. Posey, 10 E. Pleasant St., mech. engr. R. E. L. Williams, 410 Municipal Bldg., Zone 2, bldg. constr. engr. CD 2/7/45.

Md., Mount Wilson—HOSPITAL—State, Dpt. P. Imprvts., 506 Park Ave., Baltimore, Zone 1, plans by Finney, Wolcott & Assoc., 320 W. 24 St., Baltimore, 4 residences for doctors, apartment and dormitory for staff at Mt. Wilson State Hospital, **$500,000.** John B. Funk, 506 Park Ave., Baltimore, ch. engr. CD 12/28/49.

Mass., Boston—SCHOOL—City, Dpt. School Bldgs., 26 Norman St., plans by Thomas F. McDonough, 25 Huntington Ave., brick, steel Michael J. Perkins School addn., John A. Andrews Dist., South Boston, **$250,000.**

▲ **Mass., Chelsea**—HOUSING—City of Chelsea Housing Auth., City Hall, plans by Kelly & Gruzen, and Wm. Davies, assoc. archts., 73 Tremont St., Boston, 105-unit brick, concrete apartment type bldgs., Lock St. adjacent to Webster Ave. and Revere Beach Parkway, **$1,200,000.**

▲ **Mass., Lawrence**—HOUSING—City of Lawrence Housing Auth., 56 Melvin St., plans by Pearson Alter & James, 351 Essex St., 195-unit veterans housing, Proj. 200-2, **$2,500,000.**

Mich., Flat Rock—SCHOOL—Bd. Educ., Flat Rock, 2 story, brick, steel school addn. **$275,000.**

Mich., Flint—HOSPITAL—Hurley Hospital, c/o City Hall, plans by Fugard Burt & Wilkinson, 520 N. Michigan St., Zone 11, 3 story Hurley Hospital addn. **$300,000.** CD 9/11/46.

Mich., Lansing—SCHOOLS—City, Dwight H. Rich, supt. Schools, 2 story, brick, masonry school Maplewood Dist.; brick school, Everett Dist.; brick school, Willow Dist. **$250,000** each. CD 12/14/45.

Mich., Mount Clemens—JAIL—Comrs. Macomb Co., brick, steel jail, **$800,000.** CD 9/8/44.

Minn., Mahnomen—SCHOOL—Bd. Educ., J. Papas, supt., plans by Armstrong & Schlichting, 5 E. 22 St., Minneapolis, grade school and altering present bldg. **$275,000.** CD 1/25/45.

▲ **Minn., St. Paul**—SCHOOLS—City Planning Bd., 274 Court House, Zone 2, voted bonds Oct. 17, constr. schools **$5,229,000;** altering schools, **$3,500,000.**

▲ **Minn., St. Paul**—HOUSING—Housing & Redevelopment Auth. of St. Paul, I. Karon, exec. dir., 1745 City Hall and Court House, plans by Dimond, Haarstick & Lundgren, 416 Endicott Bldg., Slifer & Cone, 442 Endicott Bldg., and G. W. Dimond & Assoc., 613 New York Bldg., housing, Hazelwood St. and Hudson Rd., **$3,500,000;** plans by Ellerbe & Co., E. 505 First National Bank Bldg., housing, W. 7 St. and Norfolk Ave., **$3,000,000.** CD 11/3/49.

▲ **Minn., St. Paul**—SCHOOLS—Independent Consolidated School Dist. 3, E. Williams, supt., Spring and Eustis Sts., $3,200,000 bond election Dec. 5, Junior-Senior High School, Dellwood Ave. and Hy. 36, Ramsey Co., **$1,900,000;** school at Victoria St. and Co. Rd. C near Lake Owasso, **$285,000;** school, Falcon Heights (St. Paul P. O.), **$345,000;** 6 schools addn. all under **$250,000,** Magney, Tusler & Setter, 202 Foshay Tower, Minneapolis, archt.

Minn., Tyler—SCHOOL—Bd. Educ., Dr. H. T. Melgaard, clk., plans by E. D. Corwin, 818 E. First National Bank Bldg., St. Paul, voted bonds Oct. 18, 1 story school, **$350,000.**

Miss., Waynesboro—FACTORY—City, factory for Wells Lamont Corp. **$150,000.**

Mo., North Kansas City—SCHOOL—Bd. Educ., voted bonds Oct. 24, Nordclay School addn. **$250,000.**

Neb., Lincoln—HIGH SCHOOL—University of Nebraska, Lincoln, teachers college high school. **$500,000.**

Neb., Omaha—SCHOOL—School Dist. 66, Loveland Dist., R. F. D., Omaha, voted bonds, Junior-Senior High School. **$550,000.** L. A. Daly Co., Insurance Exchange Bldg., archts. CD 10/6.

O., Stow—SCHOOL—Bd. Educ. Stow, voted bonds, high school. **$465,000.** CD 11/25/49.

Okla., Norman—GEOLOGY—University of Oklahoma, Norman, plans by Coston & Frankfurt, Apco Tower, Oklahoma City, geology building addn. **$650,000.**

R. I., Jamestown—SCHOOL—Town, Jamestown, brick, steels school. **$600,000.** CD 7/18/47.

Tex., Lubbock—WAREHOUSE—City, plans by Atcheson & Atkinson, Lubbock, municipal equipment, service and warehouse. **$111,000.** CD 10/6.

Tex., Vernon—SCHOOL, etc.—Vernon Independent School Dist., Vernon, plans by Wilson & Patterson, Majestic Bldg., Fort Worth, school addns., alterations, **$450,000.** CD. 6/8.

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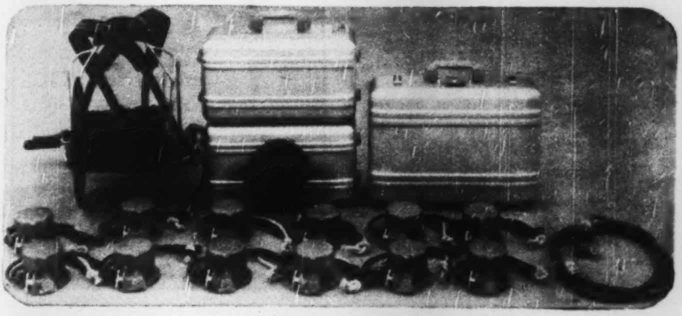

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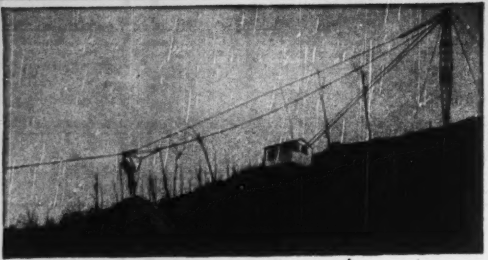

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Va., Halifax—HIGH SCHOOL—Halifax County Public Schools, Office R. L. Lacy, div. supt., Halifax, plans by C. H. Hinnant, Lynchburg, Negro high school. **$780,000.**

N S., Halifax—APARTMENT—Municipality, 3 story apartment, **$500,000.**

Ont., Barrie—COLLEGIATE INSTITUTE—Barrie District Collegiate Institute Bd., 178 Bayfield St., plans by Page & Steele, 72 St. Clair Ave. W., Toronto, 2 story, brick collegiate institute addn. **$570,000.**

Ont., Brantford—SCHOOL—Brantford Bd. Educ., Brantford, high school, **$970,000.** CD 1/31.

Ont., Kincardine—SCHOOL—Kincardine School Bd., Kincardine, plans by C. H. Gillin, 284 Dundas St., London, 1 story high school, **$400,000.** CD 1/31.

Ont., Norwich—SCHOOL—Norwich High School Bd., Norwich, plans by S. B. Coon & Son, 4 St. Thomas St., Toronto, brick, steel, concrete high school, **$400,000.** CD 7/25.

▲ **Ont., St. Thomas**—HOMES—City, E. C. Glidden, mayor, 200 land assembly homes. Approx. **$1,100,000.** H. Brubaker, c/o owner, engr. CD 2/5/47.

COMMERCIAL BUILDINGS

Calif., Los Angeles—CLINIC—Holy Cross Clinic, 4056 Whittier Blvd., plans by Walker, Kalionzes, Klingerman, 488 S. San Vincete Blvd., 2 story, rein.-con. clinic addn. **$250,000.**

▲ **Calif., Oxnard**—DWELLING—Krouser-Kaiser Co., 8825 Olympic Blvd., Beverly Hills, plans by Edwin D. Martin, 8825 Olympic Blvd., Beverly Hills, 88 frame dwelling and site development, **$1,000,000.**

Colo., Colorado Springs—Colorado College, W. H. Gill, pres., Colorado Springs, plans by Thomas & Sweet, engrs. and archts., 224 Colorado Springs National Bank Bldg., 200-unit women's dormitory **$250,000;** plans by Edward L. Bunts, engrs. and archts., 21 E. Monument St., 200-unit mens dormitory, **$250,000.** CD 11/13/47.

Conn., Danbury — SYNAGOGUE, etc. — Leroy Platrowitz, chn. Bldg. Comn., Danbury, plans by Allen H. Pokras, 943 Main St., Bridgeport, brick, steel synagogue and classrooms, Deer Hill Ave. **$300,000.** CD 2/16/49.

Ga., Decatur—LIBRARY—Columbia Theological Seminary, c/o Logan & Williams, archts., Palmer Bldg., Atlanta, library, **$350,000.**

Ill., Galesburg—COLLEGE MEMORIAL, etc.—Knox College, Galesburg, college memorial, gymnasium, **$750,000.**

Ill., Joliet—APARTMENT—Ford C. June, Joliet, (second unit) apartment, 3 two-story bldgs. **$325,000.**

Kan., Wichita—OFFICE—Kansas Gas & Electric Co., 201 N. Market St., 5 story office, **$500,000.**

Kan., Wichita—EDUCATIONAL—Plymouth Congregational Church, 3612 E. First St., plans by Leaper & Gilbert, 511½ N. Hillside St., educational bldg., **$275,000.**

Ky., Louisville—NURSES HOME—Children's Hospital, Chestnut and Floyd Sts., plans by Joseph H. Kolbrook, Starks Bldg., 2 story, bsmnt., 75x160 ft., brick nurses home for Children's Hospital, **$250,000,** E. R. Ronald & Assoc., 554 S. Third St., consult. engrs.

Md., Frederick—LABORATORY, etc.—Hood College, Dr. Andrew G. Truxal, pres., Frederick, alterations to Brodbeck Hall, laboratory, chapel, **$300,000.** CD 1/12/45.

▲ **Mass., Jamaica Plain (Sta. Boston)**—HOME—Archdiocese of Boston, Office Lake St., Brighton, plans by Maginnis & Walsh, 126 Newbury St., Boston, apartment type Nazareth Home for Children, Slocum Estate, Pond St. **$2,000,000.**

Mich., Adrian—COLLEGE—Adrian College, Claude H. Stevens, pres., Bd. Trustees, 1000 Penobscot Bldg., Detroit, brick, steel college expansion. **$500,000.**

Mich., Gratiot (Sta. Detroit)—SHOPPING CENTER—J. L. Hudson Co., Oscar Webber, pres., 1206 Woodward St., Detroit, brick, steel Eastland Shopping Center, Eight Mile and Kelley Rds. **$500,000.** Seward Mott, c/o owner, site engr.

▲ **Mich., Lansing**—DEPARTMENT STORE—J. C. Penney Co., 100 S. Washington St., plans by O. J. Munson, 409 Busch Bldg., 4 story, brick, steel, concrete department store, Washington Ave. and Kalamazoo St., **$1,250,000.**

Mich., Midland—COUNTRY CLUB—Midland Country Club, Midland, plans by Alden B. Dow, Midland, 3 story, brick country club, **$250,000.** Dow Chemical Co., Chemical Library, 47 Bldg., lessee.

Mich., Southfield—SHOPPING CENTER—J. L. Hudson Co., Oscar Webber, pres., 1206 Woodward St., Detroit, shopping center, Greenfield Rd. and James Couzens Hy. **$750,000.** Seward Mott, c/o owner, site engr.

Minn., Minneapolis—CHURCH—Second Christian Science Church, 211 S. 11 St., plans by Magney, Tusler & Setter, 202 Foshay Tower, church, Third Ave. S and Twelfth St. **$400,000.**

Mo., Parkville—DORMITORY, etc.—Park College, Parkville, plans by Neville-Sharp & Simon, 1221 Baltimore St., Kansas City, Mo., women's dormitory, **$350,000,** library, **$350,000.**

Neb., Hastings—MUSIC CONSERVATORY, etc.—Hastings College, Hastings, music conservatory, **$250,000;** science bldg. **$300,000.** CD 7/26/45.

▲ **N. Y., New York**—HOSPITAL—Bd. Managers, St. Lukes Hospital, 113 St. and Amsterdam Ave., plans by York & Sawyer, 101 Park Ave., Zone 17, 2 story hospital to house out-patient clinic and diagnostic facilities, incl. bsmnt. cut from bedrock as aerial attack shelter. **$3,000,000.**

Ore., Portland—HOSPITAL—St. Vincents Hospital, 2447 N. W. Westover St., plans by John Maloney, Central Bldg., Seattle, Wash., bldg. to house kitchen, cafeteria, parking area and tunnel, **$500,000.**

▲ **Tenn., Memphis**—HOTEL APARTMENT—Crosstown Developing, Inc., c/o W. C. Lester, archt., Dermon Bldg., Zone 1, 8 story, 133 unit concrete structural frame with brick exterior walls hotel apartment. **$1,250,000.**

Tex., Abilene—CHURCH, etc.—Church of the Heavenly Rest, 1331 N. 3 St., plans by Philip Hubert Froham, 1741 De Sales St. N. W., Wash., D. C., and Harold H. Martin, 1188 N. Los Robles Ave., Pasadena, Calif., church and parish house. **$350,000.** CD 10/30.

Tex., Houston—CHILDRENS HOME—Dean Memorial Home, 411 N. Fitzhugh St., Dallas, plans by Thomas, Jameson & Merrill, 820 N. Harwood St., Dallas, childrens home. **$250,000.**

▲ **Tex., Houston**—HOSPITAL—St. Lukes Episcopal Hospital, 6265 Main St., plans by Staub & Rather, 2814 Va St., and Hiram A. Salisbury, assoc. archt., 3501 Buffalo Dr., 250-bed main hospital in Texas Medical Center. **$3,000,000.** Raymond L. Jenkins, 4316 Blossom St., consult. engr. CD 11/1/49.

▲ **Tex., Houston**—HOSPITAL, etc.—Texas Childrens Hospital Foundation, c/o J. S. Abercrombie, Gulf Bldg., plans by Milton Foy Martin, 3908 Main St., 100-bed childrens hospital in Texas Medical Center, **$1,500,000;** isolation wards, **$325,000;** units for research, pediatricians offices, nurses and interns quarters, **$400,000;** rein.-con. swimming pool, recreation grounds, **$75,000.** Francis J. Niven, 3908 Main St., structural engr. Dale S. Cooper & Assoc., 420 Sul Ross St., mechanical engrs. CD 9/2/48.

▲ **Tex., San Antonio**—DWELLINGS—H. P. Orts Constr. Co., 814 Gunter Bldg., plans by Shoop & Roberts, W. Olmos St., Proj. 1, 93 dwellings, concrete slab fdn., **$540,000;** Project 2, 100 dwellings, concrete slab fdn., **$610,000,** in new area off Brookhaven subdivision.

▲ **Tex., San Antonio**—BUILDINGS—Trinity University, W. Ashby St., plans by Harvey P. Smith, Natl. Bank Commerce Bldg., and B. Cocke, 3501 Broadway, science, **$275,000;** fine arts, **$275,000;** chapel, **$250,000;** Pan-American Bldg. **$260,000;** student-union bldg. **$285,000;** power plant for University Campus area, **$125,000;** steam heating plant; home economics, **$250,000;** infirmary, **$250,000;** liberal arts and auditorium, **$700,000;** gymnasium, **$300,000;** sanitary sewerage sys. **$125,000.** Frank T. Drought, 117 W. Pecan St., consult. engr. CD 8/23/45.

▲ **Wash., Seattle**—HOSPITAL—Seattle General Hospital, 5 Ave. and Marion St., Zone 4, plans by G. W. Stoddard & Assocs., 1213 Westlake Ave. N., hospital, E. Green Lake Way and Ravenna Blvd. **$3,000,000.** CD 10/24.

Wash., Walla Walla—HOSPITAL—Seventh Day Adventist Church, Walla Walla, plans by E. Cross & B. Van Poohle, Walla Walla College, 3 story, 44x126 ft., rein.-con. Walla Walla General Hospital addn. **$385,000.** CD 4/10.

Alta., Calgary—APARTMENT—Oil Capital Buildings Ltd., Calgary, plans by Rule, Wynn & Rule, 513 8 Ave. W., three 3 story frame apartments. **$450,000.**

Ont., Toronto—APARTMENT—Dell Constr. Co. Ltd., Kipling Ave., Islington, plans by E. I. Richmond, 455 Spadina Ave., apartment Royal York Rd. north of Dundas St., Humber Valley Village, Etobikoe Twp. **$975,000.** Alex Tobias, 269 College St., engr.

INDUSTRIAL BUILDINGS

Ala., Mobile—GRAIN ELEVATOR—Alabama Grain Co., c/o James A. Stewart Corp., 1402 N. Hudson St., Chicago, Ill., grain elevator. Approx. **$300,000.**

Calif., Lynwood—MARKET—Giant Food Market, 1712 E. 103 St., plans by Arthur Froehlich, 383 S. Robertson St., Beverly Hills, 1 and part 2 story, brick, steel market. Approx. **$250,000.**

Ind., Jasper—PLANT—Swift & Co., 4115 S. Packer St., Chicago, Ill., plant having 10,000 sq. ft. feeding room and 15,000 sq. ft. processing room.

Ia., Davenport—WAREHOUSE—Omar, Inc., 1910 Harney St., Omaha, Neb., branch warehouse. **$125,000.** A. B. Corn, c/o owner, engr.

Md., Baltimore—GARAGE—Shoppers Parking Service, Inc., 315-19 W. Baltimore St., Zone 1, 64x171 ft., 3 concrete deck parking garage, 315-19 W. Baltimore St.

▲ **Mich., Charlevoix**—POWER PLANT—Northern Michigan Electric Co., Boyne City, steam power plant, **$2,000,000.** Stanley Eng. Co., Muscatine, Ia., engr. CD 12/29/49, under Unclassified.

Missouri—COMPRESSOR STATION—Mississippi Fuel Corp., 407 N. 8 St., St. Louis, 5500 hp. gas compressor station, **$800,000.**

Mont., Kalispell—PLANT—Harvey Aluminum Co., Torrence, Calif., aluminum plant, **$300,000.**

N. C., Marion—MILL—Marion Mfg. Co., Marion, mill addn. **$500,000.**

Ore., Milwaukie—FACTORY—Bayly Mfg. Co., 1319 S. E. Union St., Portland, 80,000 sq. ft. clothing factory on 3 acre site. **$500,000.**

▲ **Tex., Houston**—PLANT—Reynolds Metal Co., 5008 Almeda St., aluminum plant. **$3,000,000.**

Tex., Houston—WAREHOUSE—Gus Solberger, Inc., 515 Norwood St., plans by M. R. Van Valkenburgh, 1208 Cleburne St., 120x220 ft. steel warehouse, concrete slab fdn., Lockwood Dr. and Sonora St. **$100,000.**

Tex., Houston—AUTO PARKING GARAGE—South Texas National Bank, Bank 213 Main St., plans by Kenneth Franzheim, 2306 Crawford St., 4 story auto parking garage. **$400,000.** Howard, Johnson & Kelley, Scanlan Bldg., consult. engrs.

Tex., Lubbock—PLANT, etc.—South Plains Rural Telephone Assn., Lubbock, telephone plant expansion, **$450,000;** repair shop and equipment storage, **$100,000.**

Tex., Tahoka—SHOP and STORAGE—Poka-Lambro Rural Telephone Co-operative, Tahoka, repair shop and storage, **$100,000;** main telephone plant expansion, **$525,000.**

▲ **Tex., Texas City**—PLANT—Carbide & Carbon Chemicals Corp., Texas City, plant expansion. **$7,500,000.**

Va., Richmond—PLANT—Southern Biscuit Co., Inc., Terminal Pl., plant addn. **$360,000.**

Wis., Plymouth—FACTORY—Passinii Cheese Co., plans by Satre & Senescall, 707 Center Ave., Sheboygan, 1 story, bsmnt., 48x104 ft., rein.-con., steel, concrete block cheese factory addn.

▲ **Wis., Superior**—OIL REFINERY—Western Oil & Fuel Co., 227 Colfax Ave. N., Minneapolis, Minn., oil refinery, **$7,500,000.**

Wis., Viroqua—PLANT—Viroqua Co-operative Creamery Co., plans by E. F. Klinger & Assocs., engrs. and archts., 218 S. Barstow St., Eau Claire, 2 story, 35x58 ft., 1 story, 38x58 ft., concrete, brick, tile dairy plant addn.

▲ **Alta., Edmonton**—REFINERY—Imperial Oil Ltd., 56 Church St., Toronto, Ont., refinery exten. Approx. **$5,000,000.**

▲ **Ont., Marathon**—PLANT—Marathon Corp., Rothschild, Wis., U. S. A., A. J. Stevens, pres., and Marathon Paper Mills of Canada, Ltd., Public Utilities Bldg., Port Arthur, chemical plant steam plant enlargement. Approx. **$3,000,000.** CD 12/6/48.

Ont., Merritton—PLANT—Alliance Paper Mills Ltd., 350 Bay St., Toronto, plant addn. **$250,000.** R. C. Shearer, c/o owner, engr.

Ont., Ottawa—WAREHOUSE, etc—Brewers Warehouse Co. Ltd., 19 Richmond St. W., Toronto, 1 story, bsmnt., 60x85 ft., concrete block, brick, steel warehouse and store, Cathcart and Dalhousie Sts., Approx. **$100,000.**

Que., St. Hyacinthe—FACTORY—International Worsted Mills Ltd., 333 Broadway, Montreal, plans by M. W. Roth, 1015 W. Sherbrooke St., Montreal, 1 story, 60x200 ft., concrete, brick factory. **$100,000.**

Ont., Sudbury—SHOWROOM, etc.—Evans Lumber Co. Ltd., 59 Lorne St. N., plans by L. N. Fabbro, 493 Ramsay Rd., 2 story, 60x100 ft., concrete masonry showroom and office, Approx. **$175,000.**

UNCLASSIFIED

Alabama—RURAL DISTRIBUTION LINES—Central Alabama Electric Co-operative, Prattville, 325 mi. rural distr. line and sys. imprvs., Autauga Co. **$730,000.**

▲ **Alabama** — RAILROAD TRACKAGE, etc. — Southern Railway System, A. B. Akers, ch. engr., McPherson Sq., Wash., 13, D. C., 75 mi. railroad trackage, facilities for locomotive and car repairs, etc., Irondale, **$9,000,000.** A. D. Perkins, Transportation Bldg., Birmingham, assoc. engr.

Louisiana — RURAL DISTRIBUTION LINES — South Louisiana Electric Co-operative Assoc., Houma, 75 mi. rural distr. lines, sys. imprvs. Terrebonne Co., **$425,000.** CD 11/16/44.

La., Boyce—NATURAL GAS SYSTEM—Town voted bonds Oct. 24, natural gas sys. **$235,000.** CD 10/9.

Mich., Ann Arbor—STADIUM—City, Bd. Educ., stadium. **$100,000.**

Miss., Biloxi—STADIUM—City, defeated bonds, athletic stadium. **$190,000.** CD 10/9.

New Mexico—TELEPHONE LINES—Roosevelt County Telephone Co-operative, Portales, rural telephone lines, Roosevelt Co. **$350,000.**

O., Toledo—ZOO—City, Arnold V. Finch, mgr., zoo repairs imprvs. **$200,000.** John H. Davis, city engr.

Oregon—RAILROAD—Long-Bell Lumber Co., Longview, Wash., 3 mi. logging railroad between Gardiner and East Gardiner, Douglas Co. **$500,000.** Alex Stuyanov, 833 N. Shaver St., Portland, consult. engr.

Texas—TELEPHONE LINE—Poka-Lambro Rural Telephone Co-operative, Tahoke, 2,970 mi. above ground rural telephone line extension and new lines, Lynn Co. **$850,000.**

Texas—TELEPHONE LINES—South Plains Rural Telephone Assn., Lubbock, 1,976 mi. above ground exten. telephone lines and new lines, Lubbock area. **$750,000.**

▲ **Puerto Rico**—RURAL ELECTRIFICATION PROGRAM—The Puerto Rico Water Resources Auth., San Juan, rural electrification program. **$6,000,000.** CD 9/24/45.

▲ **Ontario**—GAS PIPE LINE—Niagara Gas Transmission Ltd., E. J. Tucker, genl. mgr., 19 Toronto St., Toronto, 85 mi. 20 in. gas pipe line from Niagara River to Port Credit, near Toronto. **$6,000,000.**

Ont., New Toronto—SWIMMING POOL—Lakeshore Swimming Club, **New** Toronto, plans by Hanks & Irwin, 2848 Bloor St. W., Toronto, 45x83 ft. indoor swimming pool, **$100,000.** J. H. Hooper, 880 Bay St., Toronto, engr. Arthur S. Leitch Co., 1123 Bay St., Toronto, mech. engr.

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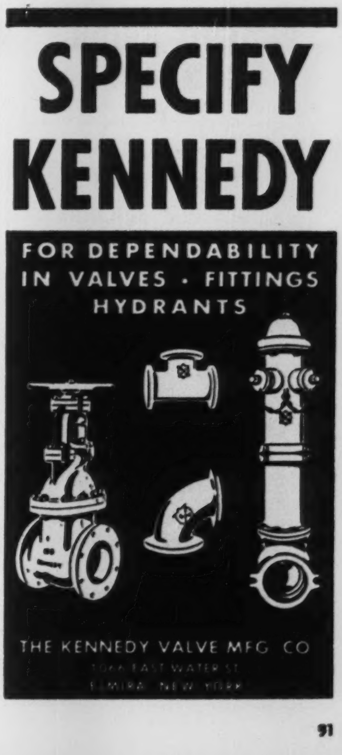

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CONSTRUCTION REPORTS-Second Section

WATER SUPPLY

BIDS ASKED

Md., Hyattsville—B.A. 11/20—Washington Suburban Sanitary Comn., Hamilton St., Contr. 865-W, furnishing, del. conveyor-elevator equip. at Willis School Filtration Plant, near Laurel, Prince Georges Co. CD 10/10/49.

Fla., Jacksonville—B.A. 11/22—City, City Hall, water main exten., to Ardsley Terrace, Walter Daniels, Engineers Bldg., Zone 2, city engr. CD 5/17/46.

Ill., Tamms—B.A. 11/22—Village, at office, C. J. McNeilly, clk., Village Hall, water supply imprv., incl. Sect. 1, tubular well; Sect. 2, water main distr. sys.; Sect. 3, 100,000 gal. elevated water storage tank; Sect. 4, water treatment plant bldg. and equip.; Sect. 5, rehabilitation existing water main, $102,000. Plans deposit $10. Warren & Van Praag, Inc., 253 S. Park St., Decatur, consult. engr. CD 4/20.

N. Y., Fallsburgh—B.A. 11/27—Town Bd., at office Town Clerk, South Fallsburgh, construct approx. 9,600 ft. 8 in. mains, incl. valves, hydrants and services in South Fallsburgh Water Dist. Plans deposit $15. Alexander Potter Associates, 50 Church St., New York, Zone 7, consult, engrs.; adv. ENR 11/16. CD 5/13/46.

† **Tex., Fort Hood**—B.A. 11/28—U. S. Eng., 606 Santa Fe Bldg., Galveston, water supply sys. imprv., Inv. No. ENG-41-243-51-17. Plans deposit $10. CD 7/21.

D. C., Wash.—B.A. 11/30—Govt. District of Columbia, Director Sanitary Eng., District Bldg., 14 and E Sts. N.W., Zone 4, general installation and construction Bryant Street Pumping Station, Bryant St. between 2 and 4 Sts. N.W. Plans deposit $25. CD 7/14/44.

Va., Gate City—B.A. 12/5—Town, Div. 1, ½ m.g.d. water filtration plant; Div. 2, 6,000 lin. ft. 8 or 10 in. force main; Div. 3, furnishing only, materials for 750 metered house services, incl. meters, yokes, valves, piping and boxes. Plans deposit $20. William B. Sours & Assoc., Box 1138, Falls Church, engr. E. V. St. Martin, Gate City, engrs. CD 8/24.

O., Fremont—B.A. 12/15—City Bd. Control, Fremont, filtration plant expansion and imprvs. $850,000. CD 11/14/49.

▲ **Ind., Gary**—B.A. 12/20—Northern Indiana Public Service Co., 500 Broadway, filtration plant, 12 filter units, 1, 2 and 3 story structures, $2,000,000. Alvord Burdick & Howson, 20 N. Wacker Dr., Chicago, Zone 6, Ill., engrs. CD 11/17/49.

LOW BIDDERS

Calif., Oakland—East Bay Municipal Utility Dist., 512 16 St., Oct. 27, installing 3,600 lin. ft. 16 in. welded steel watermains, in Spruce St., Spec. LS-52, Berkeley, from Underground Constr. Co., 75 Ave. and San Leandro Blvd. **$33,387**. CD 10/17.

N. H., Amherst—Village, Comrs. Office, Amherst, WW sys., from W. C. Ferguson, North Swanzey, **$120,794**. Fay, Spofford & Thorndike, 11 Beacon St., Boston, Mass., engrs.

CONTRACTS AWARDED

Fla., Tallahassee—City, drilling 2 deep wells, etc., to H. W. Peerson Drilling Co., 1114 7 Ave. S., Birmingham, Ala., **$117,714**. Bids 10/23. CD 10/9.

† **Idaho**—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., North Side Pumping Division, 6 deep-well pumping units for irrigation wells, Rupert, Minidoka Prop., Spec. R1-102 (Region 1), to Winthroath Pumps Inc., Alhambra, Calif., **$61,543**. Awarded 10/25. L. N. McClellan, ch. engr.

Mass., Winchendon—Town, Bd. P. Wks., Town Hall, pump. station, to Jandris Constr. Co., 35 Cedar St., Gardner, **$55,000**. Awarded 10/20.

Neb., Lincoln—City, City Hall, 18 and Farnam Sts., general contract water pump. station, to Dobson Bros. Constr. Co., 512 First Natl. Bank Bldg., **$212,875**. Est. $250,000. Bids 10/18. CD 10/11.

Pa., Farrell—Shenango Valley Water Co., Farrell, water storage tank to be placed along New Castle Lateral, to Chicago Bridge & Iron Co., Greenville.

Tex., Dallas—City, City Hall, Main and Harwood Sts., addnl. distr. lines in certain sects. of city, own forces. **$100,000**. J. T. Conroy, Pub Wks city engr. The Pitometer Co., 50 Church St., New York, N. Y., sys. consultants. CD 6/26.

Tex., Fort Worth—City, City Hall, water lines, Highlane and Burton Acres, to M. L. Snodgrass & Son, E. Lancaster St., **$29,413**. Est. $30,000. C. M. Thelin, city engr. Bids 6/23.

Tex., Lubbock—City, drilling, developing water wells, in Sect. Mo. 5, Blk. JS, to H. L. Billingsly, rising Star, **$68,855**. Est. $100,000. W. B. Holme, city engr. Bids 9/14.

Wash., Lynden—City, City Hall, 40,000 gal. steel tank on 40-ft. tower and rein.-con. filtration plant addn., to Wm. Van Werve, Lynden, **$88,029**. Bids 10/30. CD 10/18.

N. S., Florence—Municipality, water sys., to Tidewater Constr. Co. Ltd., New Glasgow, **$139,944**. Bids 8/18. CD 8/14.

Ont., Niagara Falls—City, water filtration plant at Chippewa, to Moir Constr. Co. Ltd., Box 476, St. Catherines; 24 and 30 in. pipe, to Gartshore-Thompson Pipe & Foundry Co., Stuart S.W., Hamilton, and Pressure Pipe Co. of Canada Ltd., 6905 Clanranald St., Montreal, Que., Total cost Approx. **$304,741**. CD 9/29.

Que., L'Islet Station—Municipality, water mains, to J. A. LeClair, 105 Royal Ave., Beauport, **$190,000**. Bids 8/9. CD 8/4.

▲ **Sask., Regina,**—City, supply 37 mi. 36 in. water pipe between Buffalo Pound Lake Project and Regina water mains, to Vancouver Iron Works Ltd., 1155 West 6 St., Vancouver. Approx. **$2,522,211**. CD 10/20.

SEWERS, WASTE DISPOSAL

BIDS ASKED

N. J., Trenton—B.A. 11/27—Ewing-Lawrence Sewage Auth., 156 W. State St., sewage treatment plant. Plans deposit $50. Extended date. Buck Seifert & Jost, 112 E. 19 St., New York, 3, N. Y., engrs. CD 9/18.

Va., Fairfax—B.A. 11/27—Fairfax Co., approx. 80,000 ft. 8-to 18-in. sanitary sewers, sewage lift station, appurtenant facilities in Sanitary Dist. 1, Contr. 6. Plans deposit $25. G. Hubard, Massey, Ford Bldg., consult engr.

Ia., Pocahontas—B.A. 11/28—City, outfall and outlet sewer and sewage plant, $65,000. Buell & Winter, 508 Insurance Exch. Bldg., Sioux City, engrs.

Mich., Saginaw—B. A. 11/28—City, at office Roy A. Benway, purch. officer, City Hall, sewage treatment plant, C-352. Plans deposit $25. Hubbell, Roth & Clark, Inc., 2640 Buhl Bldg., Detroit, Zone 26, consult. engr. CD 10/11/48.

Calif., San Jose—B.A. 11/29—Santa Clara County Sanitation Dist. 4, Court House, trunk line sewers, Units VIII, IX, and X. Over $50,000. Plans deposit $25. L. Cedric Macabee & D. E. Reinoechl 156 University Ave., Palo Alto, engrs.

O., Dayton—B.A. 11/30—Dpt. Service & Buildings, Municipal Bldg., Zone 2, Sect. IV, interceptor sewer in bed of Great Miami River and through McCook Field from intersection of Great Miami and Mad Rivers to Triangle Park. $432,353. Plans deposit $25. G. F. Baker, dir., adv. ENR 11/9. CD 10/23/45.

Ont., Woodstock—B.A. About 12/1—City Council, A. B. Lee, clk., Woodstock, sewage plant imprvs. $100,000. Wm. Veitch Wilton Grove, via London, engr. CD 1/3.

Wis., Iola—B. A. 12/4—Village, sewers, sewage treatment plant, water mains, pump. station. Plans deposit $15. Extended date. McMahon Eng. Co., Menasha, engr. CD 10/18.

Conn., Fairfield—B.A. 12/7—Purchasing Auth. & Sewer Comn., at office Bd. Selectmen, Town Hall, 611 Old Post Rd., sewerage sys., Contr. V-East Trunk Sewer, Sect. 1; Contr. VI-East Trunk Sewer, Sect..2; Contr. VII-Turney Creek Sub-Trunk Sewer; Contr. VIII-Branch and Laterals Sewers; Contr. IX-Branch and lateral Sewers; Contr. X-West Trunk Sewer; Contr. XI-Branch and lateral sewers; Contr. XII-Branch and lateral sewers. Plans deposit $15. Bowe, Albertson & Assoc., 110 William St., New York, N. Y., engrs. CD 1/9/47.

Tex., Boyd—B.A. 12/9—City, sanitary sewerage sys. $60,000. Plans deposit $25. J. H. Flood & Co., 2900 Franklin Ave., Waco, engrs.

Tex., Rosedale—Bids Asked—Rosedale Courts, Ben Schultz, 2821 Arbor Dr., sanitary sewers. $50,000. K. T. Edminster, 2100 Branard St., engr.

LOW BIDDERS

Ore., Portland—City, City Hall, Nov. 1, lateral sys. for Grand Ave. unit of sewerage project, from George W. Lind, 5000 N. E. Killingsworth St., **$793,065**. CD 10/6.

Tex., Highlands—Harris County Water Control & Imprvt. Dist. 1, Highlands, rejected bids Sept. 12, sewage treatment plant, L. B. **$126,000**. CD 9/27, under LB.

Wyo., Cheyenne—City, Oct. 31, sewage treatment plant construction, plant, from Riedesel-Lowe Co., Box 974, **$683,000** ***outfall sewer, from A. H. Reed Constr. Co., 706 W. 19 Ave., **$51,171** ***pipe for sewer, from Lock Joint Pipe Co., Cooper bldg., Denver, Colo., **$137,028**. Est. $1,100,000.

CONTRACTS AWARDED

O., Maumee—Village, installing 22,300 lin. ft. 6- to 12-in. sewer pipe, to L. H. Halpin, Inc., 2301 Pemberton St., Toledo, **$137,839**. Est. $160,000. CD 8/29.

Tex., Fort Worth—City, City Hall, sanitary sewers in Highlane and Burton Acres, to M. L. Snodgrass & Son, E. Lancaster St., **$53,416**. Est. $50,000. G. M. Thelin, city engr. Bids 6/23.

BRIDGES

BIDS ASKED

Wis., Milwaukee—B.A. 12/1—City, repairs, addns. to Wisconsin Ave. Viaduct. Plans deposit $10. Lloyd D. Knapp, city engr. CD 12/3/43.

La., New Orleans—B.A. 12/5—City Purchase Div., City Hall Bldg., underpass and appurtenant work on S. Carrollton Ave. at Gravier St., Proposal 15733. Plans deposit $20. B. M. Dornblatt & Assoc., Inc., 818 Carondelet Bldg., consult. engr. CD 2/4/49.

LOW BIDDERS

California—State Div. Hys., Sacramento, rein.-con. slab bridge on concrete pile bents over Kern River at Gordons Ferry on China Grade Loop, 4.5 mi. north of Bakersfield, Kern Co., from Madonna Constr. Co. 1581 Higuera St., San Luis Obispo, **$75,980**; rein.-con. slab bridge and 0.2 mi. plant mix on crusher run base on West Sacramento Freeway over Jefferson Blvd., 1 mile west of Sacramento city limits, Yolo Co., from Chas. McClosky Co. & Harms Bros., 112 Market St., San Francisco, **$76,346**. CD 10/9.

Colorado—State Hy. Dpt., Denver, Oct. 27, steel for structures on Denver-to-Boulder Turnpike, approx. 117,000 lb. reinforcing steel, 2,011,000 lb. structural steel and 14,780 ft. steel piling, Denver-Boulder, from Allied Structural Steel Co., 20 N. Wacker Dr., Chicago, Ill., **$231,282**.

▲ **Michigan**—State Hy. Dpt., Lansing, Zone 13, Nov. 2, 4 complete rein.-con., steel, and 2 partial structures for future ramps, 5 bridges on Intersection John C. Lodge and Edsel Ford Expressway, Proj. UI B 15 of 82-22-12 C1, (UI 404 25), Wayne Co., from L. A. Davidson, 213 E. St. Joseph St., Lansing, **$1,577,053**. CD 10/10.

CONTRACTS AWARDED

† **Idaho**—Bureau Pub. Roads, Dpt. Commerce, 609½ Bannock St., Boise, 0.366 mi. steel bridge on timber piling over Priest River on Coolin Rd. with grading 0.323 mi. Idaho Forst Hy. Proj. 45-A, Unit 1, Bonner Co., to Henly Constr. Co., Lewiston, **$121.125**. Bids 11/2. CD 10/25.

Utah—State Road Comn., State Capitol, Salt Lake City, concrete bridge and approach roads State Hy. between St. George and Arizona State Line, FASP No. S-309 (1), Washington Co., to Young & Smith, 204 Beason Bldg., Salt Lake City, **$79,181**. Est. $88,265. Bids 10/24. W. L. Anderson, state road engr.

Quebec—Dpt. P. Wks., (Provincial Government) Quebec City 100 ft. rein.-con. bridge over Serpentine River, Litchfield, Pontiac Co. and rein.-con. bridge Breckenridge, Pontiac Co., to Georges Gagne Ltd., 1200 Sherbrooke St. W., Montreal. Approx. **$100,000** each ***100 ft. rein.-con. Bujold bridge over Bonaventure River, Bonaventure, to Kelly Constr. Co. Ltd., 36 Fenwick Ave., Montreal. Approx. **$75,000*****150 ft. rein.-con. bridge over Riviere Bayonne, Berthier, Berthier Co., to Alfree Mausseau, Berthier. Approx. **$125,000*****200 ft. rein.-con. St. John River bridge, York Canton, Gaspe South Co., to Russell Keays, Gaspe. Approx. **$100,000*****100 ft. rein.-con. bridge over Coaticook River, Waterville, Compton Co., to Oscar Lessard, Martinville. Approx. **$50,000**. Grand total $550,000. O. Desjardine, c/o owner, engr.

STREETS AND ROADS

BIDS ASKED

Calif., Long Beach—B.A. 11/28—Bd. Supervs. Los Angeles Co., 501 Hall of Records, imprv. approx. 9,000 ft. Belhart St., (C.C. 0-676), $50,000. E. A. Burt, comr.

† **Alaska**—B.A. 11/29—Bureau Pub. Roads, Dpt. Commerce, Juneau, grading, construct 3 bridges, wid'n. fourth span on 9.5 mi. Seward-Anchorage Hy. Sect A1, north of Seward between Mile Posts 5 and 12, and Miles Posts 14 and 17.5. Plans deposit $10. CD 8/17/45.

† **Virginia**—B.A. 12/12—U. S. Eng., foot of Front St., Norfolk, relocation of U. S. Hy. 58 at Butchers and Rudds Creeks, Buggs Island Reservoir Proj., Mecklenburg Co. Plans deposit $20. CD 8/3/44.

Tex., Houston—Bids Asked—Rosedale Courts, c/o Ben Schultz, 2821 Arbor Dr., street constr. and paving. $60,000. K. T. Edminster, 2100 Branard St., engr.

LOW BIDDERS

Arizona—State Hy. Dpt., Phoenix, Nov. 1, bit. 3 mi. Tuscon Freeway, Pima Co., from Western Constructors, Westward Ho Hotel, Phoenix, **$407,815**. CD 10/20.

California—State Div. Hys., Los Angeles, road mix on cement treated surf. 2.9 mi. Lakeview Ave. between Nuevo and Lakeview, Riverside Co., from Foster & McHarg, Box 244, Riverside, **$73,466**. CD 10/9.

Colorado—State Hy. Dpt., Denver, Oct. 31, stabilizing structures, 7.541 mi. State Hy. 100 between Springfield and Pritchett, Colo. Proj. S 0002 (7) Baca Co., from Colorado Constructors, Inc., 725 W. 39 Ave., Denver, **$90,093**. Est. $101.244. CD 10/23.

Colorado—State Hy. Dpt., Denver, rejected bids Oct. 27, grading, structures, surf. 3.145 mi. State Hy. 145 between Placerville and Telluride Colo. Proj. S 0150 (2), Sam Miguel Co., LB. **$137,975**. Est. $110,539.

▲ **Delaware**—State Hy. Dpt., Dover, Nov. 1, c. conc. 4.465 mi. divided highway Dover By-Pass, Contr. 913, Kent Co., from George & Lynch, Delaware Trust Bldg., Wilmington, **$1,198,169**. CD 10/12.

Fla., Miami—City, c/o Dir. of Eng. 3318 Dinnery Key Dr., Nov. 1, sidewalk imprvt. Proj. SK-142, from H. M. Engelhart, 259 Alhambra Corcle, Coral Gables, **$194,800**.

Maryland—State Rds. Comn., Baltimore, Zone 2, Oct. 31, grading, drainage, stabilization, bit. surf. tr. 1.261 mi. Burbage Crossing Rd., Contr. Wi-257-1-117, F. A. Proj. S 198 (1), Wicomico Co., from Hannaman-Burroughs Co., Salisbury, stone **$65,185**, slag **$63,395**. CD 10/26.

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▲ **Massachusetts**—Commonwealth of Mass., Dpt. P. Wks., Boston, Oct. 31, constr. north and south exten. of East Boston Expressway linking Sumner Tunnel to Airport and McClellan Hy., Boston, from V. Barletta Co., 10 Whipple Ave., Roslindale, **$2,894,788**. CD 10/20.

Tex., El Paso—City, Oct. 19, street paving, Conception and Main Sts., from Lee Moor Contg. Co., Bassett Tower, **$66,212**. CD 10/16.

CONTRACTS AWARDED

California—State Div. Hys., Sacramento, plant mix on cement treated surf. constr. bridges 4.4 mi. between Robinson Ferry Bridge and Alton Guide Crossing, Humboldt Co., to Frederickson Bros., 1259 65 St., Emeryville, **$946,610**. Bids 10/25. CD 10/31, under LB.

Calif., Salinas—City, City Hall, imprv. streets in Fairview Park Subdivision, Beverly Dr., etc., to Stolte Inc., Box 1470 Monterey, **$63,519**. Awarded 10/30. CD 3/28/45.

▲ **Illinois**—State Div. Hys., Springfield, c.conc. 9.91 mi. U.S. Route 50, Richland and Lawrence Counties, to O'Connor Constr. Co., 614 Reisch Bldg., Springfield, **$1,066,305**. Bids 10/20, awarded 11/6. CD 10/24, under LB.

Minnesota—State Hy. Dpt., St. Paul, grading 13.4 mi. road between St. Peter and junction T. H. 111 at New Sweden, Nicollet Co., to W. Zaske, Danube, **$117,907**; grading 11.8 mi. road between Hayfield and 2.8 mi. east of West Olmstead Co. line, to L. Joyce, Rochester, **$167,343**. Bids 10/27. CD 10/12.

Minn., Osakis—Village, J. S. Hanson, clk., street work incl. 6,000 cu. yd. excav., 12,715 tons base course material, 54,293 sq. yd. bit. surf., 2,230 tons grav., to Ashworth & Son Co., 3601 Alabama Ave., St. Louis Park, **$57,343**. Bids 8/23. CD 3/14/45.

Pennsylvania—State Hy. Dpt., Harrisburg, crushed aggregate base with bit. surf. 22 ft. and variable in width incl. constr. rein.-con. box, 30,565 ft. L.R. 43025 (1), 60001 (1), T. R. 208, between Grove City Boro and Barkeyville, Mercer and Venango Counties, to E. M. Brown, Inc., 11 Guelich Ave., Clearfield, **$538,869**. Bids 10/27, awarded 11/3. CD 11/1, under LB.

Rhode Island—State Hy. Dpt., F. A. Adams, purch. agt., State House, Providence, c. conc. asph. base E. Main and Pike Sts., West Warwick, to General Eng. & Contr. Co., 12 Stukely St., Providence, **$196,400**. Awarded 10/30.

South Dakota—State Hy. Comn., Pierre, service grav., 7.134 mi. F 170 (23), Minnehaha Co., to England & Roth Constr. Co., Rapid City, **$118,345*****service gravel 6.02 mi. S 197 (7) and S 102 (2), and c. conc. 0.5 mi. S 508 (1), Lincoln Co., to Dave Gustafson & Co. Inc., 502 E 6 St., Sioux Falls, **$136,405**. Bids 10/24. CD 10/12.

▲ **Tennessee**—State Hy. Dpt., Nashville, wid'n. resurf. 27.46 mi. State Hy. 112 from Davidson Co. line to Old East City Limits of Clarksville, Proj. SAP 907-A, Cheatham, Robertson and Montgomery Counties to Sam Finley, Inc., 292 North Ave. N. W., Atlanta Go., **$713,888*****wid'n., resurf. 24 mi. sect. State Hy. 1 from Brownsville exten. to the junction of State Hy. 59, Proj. No. SAP 909-A, Haywood, Tipton and Fayette Counties, to J. B. Michael & Co., 1021 Heywood St., Memphis, **$669,826**. Bids 8/25. CD 8/29, under LB.

Tex., Dallas—City, City Hall, Main and Harwood Sts., street imprvs. and paving various streets, own forces. **$125,000**. J. T. Conroy, Pub. Wks. city engr. The Pitometer Co., 50 Church St., New York, N. Y., sys. consultants. CD 12/1/48.

† **Va., Fort Belvoir**—Dpt. of Army, Fort Belvoir, roads, parking area, sidewalks, repairs in 64 areas to Newton Asphalt Co., Mill Rd. and Roberts Lane, Alexandria, **$83,240**.

EARTHWORK, WATERWAYS

BIDS ASKED

† **Nebraska**—B.A. 11/21—Bureau Reclamation, Dpt. Interior, Torrington, Wyo., rehabilitation Lateral 98.1, Station 17 plus 13.5, to 44 plus 75.4, Fort Laramie Canal, approx. 8 mi. southwest of Morrill, Spec. R7-703C-160 (Region 7), North Plate Project.

† **Idaho**—B.A. 11/28—U. S. Eng., 19 E. Poplar St., Walla Walla, Wash., revetments at Horne, Upper Labelle and Upper Bannock Jim locations near Lorenzo Bridge, Serial No. 45-164-51-32.

† **Ill., Fort Sheridan**—B.A. 11/28—U. S. Eng., 520 Merchandise Mart, Chicago, Zone 54, beach erosion protection, on western shoreline of Lake Michigan, Serial No. Eng. 11-032-51-14.

N. S., Blue Rocks—B.A. 11/29—Acting Secy. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., breakwater, Approx. $30,000. Plans deposit $20. R. Blais, c/o owner, engr.

† **Arkansas**—B.A. 11/30—U. S. Eng., P. O. Box 60, Vicksburg, Miss., Two Bayou Creek channel imprvt., Ouachita and Calhoun Counties, approx. 6.5 mi. east-southeast of Camden, Serial No. CIVENG-22-052-51-67.

† **Tennessee**—B.A. 11/30—U. S. Eng., P.O. Box 97, Memphis, Zone 1, levee work, approx. 1¼ mi. below west end of Memphis and Arkansas Bridge, incl. construction Sect. 7 of Memphis, Wolf River and Nonconnah Creek, Tennessee Proj. incl. levees, Fairfax and Workhouse Reservoirs and appurtenant structures, in northern part of city of Memphis, Shelby Co., Inv. Serial No. CIVENG 40-041-51-53. Plans deposit $15.

† **Kansas**—B.A. 12/6—U. S. Eng., 1709 Jackson St., Omaha, Neb., one 26 x 31 ft. igloo-type underground magazine, 1,000 lin. ft. chain link fence, ¼ mi. crushed rock access drive, electrical facilities for protective lighting at Fort Riley, Riley Co., Spec. Eng. 25-066-51-24.

† **Oregon**—B.A. 1/3—U. S. Eng., 19 E. Poplar St., Walla Walla, Wash., mfg., testing, del. at McNary Dam 15 kv bus structures, breakers, switchgear and generator grounding equip. for use in McNary Dam, CIVENG 45-164-51-30.

† **North Dakota**—B.A. after 4/1—U. S. Eng., Fort Lincoln, P. O. Box 300, Bismarck, Snake Creek Embankment, Garrison Dam and Reservoir Proj. in Twps. 147 and 148 N, Range 83 W, McLean Co. CD 6/1/44.

LOW BIDDERS

† **California**—Bureau Reclamation, Dpt. Interior, Box 302 Chico, received no bids Oct. 31, levee portions of North and South Canals, near Orland, Butte Co., Spec. 200C-135. CD 10/17.

† **Connecticut**—U. S. Eng., P. O. Box 2316, Boston, 7, Mass., Oct. 31, channel imprvs., Mad River, Winsted, CIVENG-19-016-51-13, from Candor Constr. Co. Inc., 294 Hamilton Ave., Norwich, **$251,040**. CD 10/10.

† **Louisiana**—U. S. Eng., foot of Prytania St., New Orleans, Oct. 31, approx. 23,100 lin. ft. brush dikes on west bank of Mississippi River, Plaquemines Parish, Inv. 51-58, from Sam Carline, Inc., Berwick, **$147,840**. CD 10/13.

† **New Mexico**—U. S. Eng., P O Box 1538, Albuquerque, cancelled bids to have been opened about Nov 14, emergency flood control work, Rio Grande, Santa Cruz Irrigation Dist, near Espanola, CIVENG 29-005-51-6. Will re-advertise. CD 10/24.

† **Texas**—U. S. Eng. 606 Santa Fe Bldg., Galveston, Oct. 31, Intracoastal Canal Waterway floodgate repairs, Brazos River, Inv. No. CIVENG 41-243-51-31 from C. C. Reid, Box 55, West Columbia, **$95,800**. Est. $100,000. CD 10/23.

CONTRACTS AWARDED

▲† **Arizona—California—Nevada**—Bureau Reclamation, Dpt. Interior, Boulder City, Nev., installing turbines, transformers, appurtenant equip. for Units A3, A4 and A9; relocation transformer bank Y, constr. addnl. transformer circuit and terminal facilities for Hoover switchyard at Hoover Power Plant, to C. M. Elliott & John C. Gist, Reading, Calif., **$1,777,242**. Est. $1,387,334. Bids 9/28, awarded 10/23. CD 10/6, under LB.

Calif., Los Angeles—City Harbor Comn., City Hall, reclamation and maintenance dredging, Item 26(A) Sect. 3, to Franks Dredging Co., Pier E, Berth, 120, Long Beach, **$158,700**; Item 2(B) Sect. A, to Case-Connelly Co., 2051 E. Del Amo Blvd., Compton, **$89,544**. CD 10/27, under LB.

† **Idaho**—Bureau Reclamation, Dpt. Interior, Burley, North Side Pumping Div., earthwork, structures for laterals and sublaterals from Wells 64824, 18A824, 8A824, 21A824, 8A823, 6A923, 27A823, and 33A922 near Rupert and Paul; Minidoka Proj., Spec. R1-601 (Region 1), to Holmes Constr. Co., Heyburn, **$34,821**. Bids 10/10, awarded 10/26. CD 9/14.

▲† **Tex., Roma**—International Boundary and Water Comn., U. S. A. and Mexico, 1st. Natl. Bank Bldg., El Paso, Tex, Falcon Dam and power plants lower Rio Grande, Schedule 1, U. S. A. portion of work to C. F. Lytle Co., et al 250 Insurance Exchange Bldg., Sioux City, Ia., **$7,801,064*****Schedule 2, Mexican portion of work, to Constructora Intercontinental, S. A., Mexico, (Amis Constr. Co., 1647 Exchange St., Oklahoma City, Okla., Edward Peterson Co., 903 WOW Bldg, Omaha, Neb., Tellepsen Constr. Co., 1710 Telephone St., Houston, Tex., Foley Bros., Inc., 900 New York Bldg., St. Paul, Minn., Massman Constr. Co., 20 W. 9 St., Kansas City, Mo., Lytle Constr. Co., 250 Insurance Exchange Bldg., Sioux City, Ia., San Ore Constr. Co., McPherson Kan.) 68,525,983 pesos. CD 10/3 and 10/6.

▲ **Washington**—Bureau Reclamation, Dept., Interior, Ephrata, earthwork, concrete lining for Main Canal, Station 255 plus 85.56 to 326 plus 90, Columbia Basin Proj., Spec. 3190, to J. A. Terteling & Sons, Inc., 4011 Fairview Av., Boise, Idaho, **$1,043,275**, Est. $1,002,869. Bids 10/19, awarded 10/24. CD 10/27, under LB.

▲ **Quebec**—Aluminum Co. of Canada, Sun Life Bldg., Montreal, constr. 200,000 hp. hydro-electric power development at Chute du Diable on Peribonka River, Isle Maligne, to Fraser-Brace Eng. Co. Ltd., 360 St. James St. W., Montreal, Approx. **$20,000,000**. Shawinigan Eng. Co. Ltd., 660 Dorchester St. W., Montreal, engr. CD 8/15, under Unclassified.

AIRPORTS

BIDS ASKED

† **Vt., Burlington**—FUELING SYSTEM—B.A. 11/21—U. S. Property & Disbursing Officer for Vermont, Bldg. 850, Fort Ethan Allen, aircraft fueling sys., Burlington Municipal Airport, Serial No. 43-007-NG-2-51.

† **Fla., Jacksonville**—BOILER PLANT—B.A. 11/28—Dpt. Navy, Charleston Naval Base, Charleston, S. C., reconditioning, rehabilitating boiler Plant 21 at Auxiliary Air Station at Cecil Field. Plans deposit $5.

† **Fla., Key West**—ELECTRIC WIRING SYSTEM—B.A. 11/28—Dpt. Navy, Charleston Naval Base, Charleston, S. C., replacing electric wiring sys., incl. enlarging outdoor sub-station, installing large capacity feeders at Boca Chica Naval Air Station, NOY 22635k Spec. 255228. Plans deposit $5.

N. Y., Idlewild—CONTROL TOWER—B.A. 11/29—At office Chief Engineer, The Port of New York Auth., 111 8 Ave., New York, Zone 11, Contr. NY A-112, permanent control tower at New York International Airport. Plans deposit $100. CD 8/17.

CONTRACTS AWARDED

† **Alaska, Anchorage**—AIRPORT—Civil Aeronautics Admin., Anchorage, ILS and airport surveillance radar facility at International Airport, Inv. 851-390, to Reed & Martin, Fairbanks, **$69,925**. CD 8/6/48.

LATIN AMERICA

Mexico, Altar—Mexican Govt., Sria. de R. H., Reforma, 69, Mexico City, receiving bids December 1, principal canal, drainage, roads, Altar River Irrigation Dist. Plans deposit $23.12.

PUBLIC BUILDINGS

BIDS ASKED

Ont., Kincardine—SCHOOL—B.A. 11/20—Kincardine School Bd., David Houston, secn., 1 story, 132x172 ft., brick, steel high school, $400,000. C. H. Gillin, 285 Dundas St., London, archt. CD 10/30.

† **Va., Fort Belvoir**—COMMUNICATIONS—B.A. About 11/28—U. S. Eng., First and Douglas Sts. N. W. Wash. 25, D. C., communications bldg., in vicinity of Flagler Rd. and 18 St., CIVENG 49-080-51-32 (31). Plans deposit $20.

Calif., Sacramento—SCHOOL—B.A. 11/28—Arcade Elementary School Dist., Rt. 7, Box 3685, 13 classroom Del Paso Manor School. Approx. $250,000. Plans deposit $25. Gordon Stafford, 1024½ J St., archt.

Calif., Santa Rosa—HEADQUARTERS—B.A. 11/28—State Div. Architecture, P. Wks. Bldg., Sacramento. (1) general contract (2) heating and ventilating (3) plumbing (4) electrical work, 18,600 sq. ft., wood frame, concrete headquarters bldg. for Division Forestry, incl. warehouse, shop, gas and oil storage, etc. Plans deposit $25. Anson Boyd, Sacramento, state archt.

Calif., Woodland—ARMORY—B.A. 11/28—State Div. Architecture, P. Wks. Bldg., Sacramento, Type A, 11,000 sq. ft., rein.-con. armory. Plans deposit $25. Bids 9/12 rejected. Anson Boyd, Sacramento, state archt. CD 8/22.

La., Natchitoches—ARMORY—B.A. 11/28—Northwestern State College, Natchitoches, constr. R. O. T. C. Armory on campus. Plans deposit $50. Smith & Padgett, 512 Ouachita National Bank Bldg., Monroe, archts.

Minn., Cambridge—POWER PLANT—B. A. 11/28—State, Dpt. Admin., P. T. Peterson, dir., State Capitol, St. Paul, power plant addn. at State School and Colony, $323,000. Plans deposit $25, F. W. Jackson, St. Cloud, archt. CD 7/11/49.

▲ **Minn., Waseca**—SCHOOL—B. A. 11/28—University of Minnesota, R. S. Callaway, purch. agt., 323 Admin. Bldg., Main Campus, Minneapolis, School of Agriculture, $1,000,000. Plans deposit $25, Hein & Fugelso, Albert Lea, archts. CD 6/22/49.

N. C., Greensboro—HOUSING—B.A. 11/28—Greensboro Housing Auth., Greensboro, 100 buildings, 400 unit housing. Charles C. Hartmann, 120 Jefferson Standard Bldg., archt. CD 10/12.

O., Athens—LINDLEY HALL—B.A. 11/28—Dpt. P. Wks., S. O. Linzell, dir., 705 Ohio Dpts. Bldg., Columbus, Lindley Hall addn., Ohio University. Inscho, Brand & Inscho, 60 E. Broad St., Columbus, Zone 15, archts. H. G. Allen, c/o Div. State Arch. and Engr., Ohio Dpts. Bldg., Columbus, consult archt.

Tex., Garland—SCHOOL—B.A. 11/28—Garland Independent School Dist., Garland, brick, hollow tile walls, W. C. Daugherty School, concrete fdn. $250,000. Wyatt C. Hedrick, 904 Fort Worth Ave., Dallas, engr. and archt. CD 9/20.

Va., Louisa—HIGH SCHOOL—B.A. 11/28—School Bd. Office, Court House, Louisa, Central High School for Negroes. $500,000. Plans deposit $25. S. J. Makielski, Charlottesville, archt.

Va., Roanoke—HOUSING—B.A. 11/28—Roanoke Housing Auth., 401 Luck Ave., 300 housing units and administration bldg., Proj. VA-11-1. Plans deposit $75. CD 3/13.

Mass., Everett—HOUSING—B.A. 11/29—City of Everett Housing Auth., Albert E. Morris, exec. dir., 48 Elm St., 2½ story, bsmnt., 60 unit Veteran's Housing Proj. 200-2, Elm St. and Winthrop Rd., $828,000. Plans deposit $100. Drummey-Duffill, Inc., 80 Boylston St., Boston, engr. and archt. CD 7/5.

▲ **Neb., Omaha**—HOUSING—B.A. 11/29—Omaha Housing Auth., 5529 S. 30 St., 2 housing, one at 30 and Lake Sts., and other at 30 and Spencer Sts. $3,500,000. Leo A. Daly Co., Insurance Exchange Bldg., engr. CD 9/20, under LB.

N. C., Lumberton—HOSPITAL—B.A. 11/29—Robeson County Memorial Hospital, R. H. Livermore, pres., c/o Bd. Trustees, Court House, 120 bed hospital. Plans deposit $30 general constr., $20 mechanical work. Walter W. Hook & Assoc., Inc., 303½ W. 4 St., Charlotte, archt. CD 6/6.

N. C., Raleigh—FORESTRY HORTICULTURE—B.A. 11/29—North Carolina State College, J. G. Vann, bus. mgr., Raleigh, forestry-horticulture bldg. $774,000. Plans deposit $25 general constr. $10 mechanical work. C. W. Connelly, 1201 Elizabeth Ave. and J. N. Pease & Co., Inc., 119½ E. 5 St., Charlotte, archts. and engrs. CD 6/29.

(Continued on page 96)

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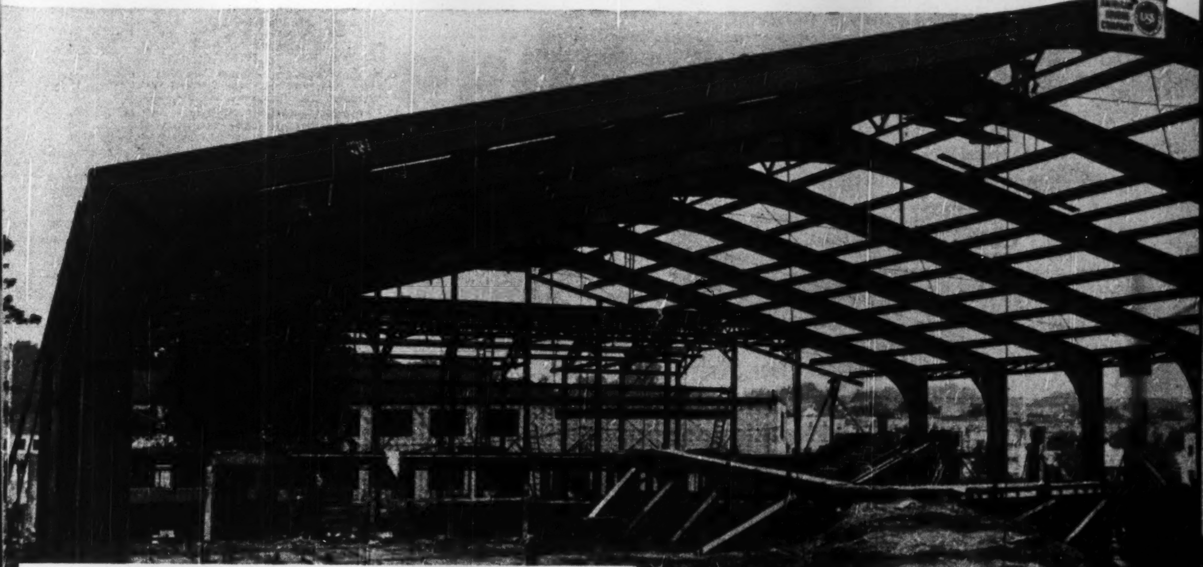
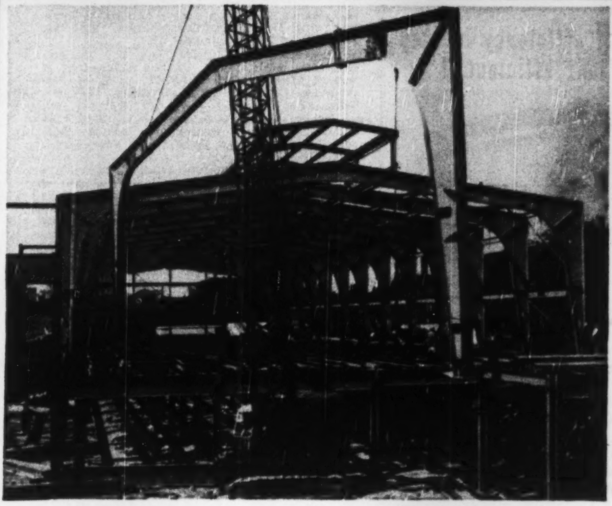


Field House—Auditorium for St. Joseph's College, Philadelphia. John McShain, Inc., General Contractor; Emile G. Perrot, Architect; Charles H. Wolf, Consulting Engineer.



Bottling plant and case warehouse, Detroit, Michigan, for The Stroh Brewery Company. Harley, Ellington and Day, Inc., Architects and Engineers.

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AMERICAN BRIDGE

UNITED STATES STEEL

(Continued from page 94)

O., Dayton—SCHOOL—B.A. 11/29—Bd. Educ., C. D. Borghardt, clk.-treas., 232 N. Main St., 2 story fire resistant, Weaver School addn., alterations, 2000 Howell Ave. Rollin E. Gebhart, Miami Savings Bldg., archt. CD 11/28/46.

Pa., Woodville—PATIENTS—B.A. 11/29—General State Auth., 18 and Herr Sts., Harrisburg, general contract; heating; plumbing; electrical work; elevators for construction of disturbed male patients bldg. at Woodville State Hospital. Plans deposit $15. Ingram, Boyd & Pratt, Empire Bldg., Pittsburgh, Zone 22, archts. A. F. Jones, c/o owner, ch. engr. CD 11/28/49.

† **Alaska, Lena Point**—OPERATIONAL—B.A. 11/29—U. S. Eng., (APO 942, c/o PM, Seattle, Wash.) Anchorage, operational bldg. at ACE Reservation, Inv. No. 595-507-51-11. Plans deposit $25.

Ga., Cedartown—COURT HOUSE, etc.—B.A. 11/30—Polk Co., joint court house-jail-office bldg. Wm. J. J. Chase & Assocs., 140 Peachtree St., Atlanta, archts. CD 1/19.

Ia., Iowa City—SCHOOL—B. A. 11/30—State Bd. Educ., 1007 Des Moines St., Des Moines, Iowa Hospital School for Severely Handicapped Children on Campus of University of Iowa. CD 1/27.

Minn., St. Louis Park—SCHOOL—B.A. 11/30—Bd. Educ., H. R. Enestvedt, supt., Elliot Grade School, 6800 South Cedar Lake Rd. $750,000. Haxby, Bissell & Belair, 1111 Nicollet Ave., Minneapolis, archts. CD 3/28.

† **N. M., Los Alamo**—BUILDINGS—B.A. 11/30—U. S. Atomic Energy Comn., Los. Alamos, 4 buildings, utilities, Inv. No. 291-51-45. $250,000. Plans deposit $50.

† **N. M., Las Cruces**—THEATER—B.A. About 12/1—U. S. Eng., P. O. Box 1538, Albuquerque, 518-seat theater, White Sands Proving Grounds (AMP-51-1), Serial No. 29-005(AMP)-51-1. Plans deposit $25.

▲ **N. C., Wilmington**—HOUSING—B.A. About 12/1—Wilmington Housing Auth., c/o Leslie N. Borey, archt., Murchison Bldg., 250 housing units, Proj. NC 13. Approx. $2,000,000. Plans deposit $50. CD 8/11.

Tenn., Chattanooga—HIGH SCHOOL—B.A. About 12/1—City, City Hall, Negro High School for South Chattanooga. $350,000. Hunt-Caton & Assoc., James Bldg., archts. CD 12/4/47.

▲ **Ont., London**—HOSPITAL—B.A. About 12/1—Victoria Hospital Trust, Wm. Loveday, chn., London, 8 story Y-shaped, brick, steel, concrete hospital, incl. 200 beds, cancer clinic, physio-therapy and pathological laboratories. $1,500,000. John M. Watt, 343 Richmond St., archt. CD 6/22.

Ariz., Phoenix—ADMISSION—B.A. 12/1—State, 24 St. and Van Buren St., 300-bed rein.-con. admission bldg. at state hospital, $360,000. CD 11/21/46.

▲ **Ala., Auburn**—DORMITORY—B.A. 12/5—Alabama Polytechnic Institute, c/o H. L. Holman, Jr., Ozark, and Van Keuren, Davis & Co., American Life Bldg., Birmingham, and Pembleton & Mims, Title Guarantee Bldg., Birmingham, archts., men's dormitory $1,000,000. Extended date. CD 9/19.

Ark., Fayetteville—HIGH SCHOOL—B.A. 12/5—Fayetteville School Bd., Fayetteville, high school, $600,000. Plans deposit $50. Paul Young, Jr., Fayetteville, archt. CD 9/8.

▲ **Ind., Indianapolis**—SCHOOL—B.A. 12/5—Bd. Educ., Perry Twp., Indianapolis, brick, stone Junior High School Banta Ave., near Shelby St. $1,000,000. Lennox & Matthews & Assoc., 644 E. Maple Rd., Indianapolis, archts.

N. Y., Brooklyn—HOUSING—B.A. 12/5—New York City Housing Auth., 63 Park Row, New York, Zone 7, general contract heating and ventilating; electrical work; plumbing; and elevators for Breukelen Houses (Proj. No. NY 5-11) in area bounded by E. 103 St., Glenwood Rd., E. 105 St., Farragut Rd., E. 108 St., Stanley, Louisiana and Flatlands Aves. Plans deposit $75, for elevators $25. CD 12/6/49.

▲ **Tenn., Nashville**—OFFICE—B.A. 12/5—State of Tennessee, Nashville, state office bldg. $6,000,000. CD 5/12.

Tenn., Nashville—HEALTH LABORATORY—B.A. 12/5—State of Tennessee Nashville, health laboratory. $650,000. Hart & McBryde, 2417 West End Ave., archts. CD 10/27.

† **Tenn., Oak Ridge**—HEALTH PHYSICS WASTE RESEARCH—B.A. 12/5—U. S. Atomic Energy Comn., P. O. Box E, Attention: R. J. Dunbar, Engineering Div., Oak Ridge, construct Health Physics Waste Research Bldg. 3504, Inv. No. 401-51-3 A. Plans deposit $10.

▲ **Fla., Miami**—SCHOOLS—B.A. About 12/6—Dade Co. Bd. P. Instruction, 275 N. W. 2 St., North Miami Junior-Senior High School, North Miami $748,000 James W. Voorhies, 629 N. E. 64 St., archt. Bethune Colored School, $300,000. Lloyd F. Vann, 1674 Coral Way, archts. CD 10/9.

▲† **N. M., Los Alamos**—LABORATORY—B.A. 12/6—U. S. Atomic Energy Comn., Los Alamos, approx. 32,000 sq. ft. rein.-con. laboratory Inv. No. 291-51-43. $750,000-1,000,000. Plans deposit $100. Skidmore, Owings & Merrill, Los Alamos, archts.

La., West Monroe—SCHOOL—B.A. About 12/15—Ouachita Parish School Bd., Monroe, high school, $250,000. Smith & Padgett, Ouachita National Bank Bldg., Monroe, archts.

† **Wash., Richland**—BUILDINGS—B.A. 12/20—General Electric Co. prime contractor to U. S. Atomic Energy Comn. for operation in Hanford Works, Richland, 2 story, concrete, 3 steel-frame and 3 frame buildings, 46x80 ft. to 24x36 ft., 1 story to 70 ft. high 37x8x5 ft. underground concrete crib and underground 30,000 gal. stainless steel tank at Hanford Works. Plans deposit $150.

O., Athens—STUDENT CENTER—B.A. About 1/1—Ohio Dpt. P. Wks., Columbus, student center at Ohio University. $900,000. Bellman, Gillett & Richards, 518 Jefferson St., Toledo, archts. CD 4/7.

LOW BIDDERS

▲ **Calif., Alameda**—SCHOOL—Bd. Educ., 2267 Alameda St., cancelled bids to have been opened Nov. 21, Enicnal High School. **$1,000,000.** CD 10/2. Will re-advertise.

Calif., Berkeley—SCHOOL—Bd. Educ., Rose and Walnut Sts., rejected bids Oct. 19, 3 story, rein.-con., steel, Burbank Junior High School. L. B. **$998,000.** CD 10/26, under LB.

Calif., Daly City—WAR MEMORIAL—City, City Hall, Oct. 30, war memorial bldg., auditorium and recreation center, from Ralph Larsen & Son, 64 S. Park St., San Francisco, **$298,623.** CD 10/3.

Colo., Colorado Springs—POWER PLANT EQUIPMENT—City, City Hall, power plant equip. incl., turbo generator, from General Electric Co., 650 17 St., Denver, base, **$456,000**; escalator, **$501,600**; condensor, from Worthington Pump & Mchy. Corp., 1640 Blake St., Denver, base, **$74,700**; escalator, **$82,170.** CD 8/29.

Ga., Demorest—HOSPITAL—Habersham County Hospital Auth., Demorest, Nov. 1, hospital, from A. C. Samford, Inc., Albany, **$581,386.** CD 9/27.

▲ **Ga., Rome**—HOUSING—Rome Housing Auth., Rome, Nov. 2, housing, Project GA5-3 and GA-54, from Batson-Cook Co., West Point, **$2,527,449.** CD 10/12.

Mass., Dedham—HOUSING—Town of Dedham Housing Auth., 381 Washington St., Boston, Oct. 27, 26 unit Veteran's Housing Proj. 200-2, from Frankini Constr. Co., Inc., 26 Mystic Ave., Medford, **$253,436.** CD 10/16.

▲ **Mich., Kalamazoo**—COLLEGE—State, A. N. Langius, dir. State Bldg. Dpt., 115 State Office Bldg., Lansing, Oct. 31, general contract 3 story, brick, steel, concrete, 100,000 sq. ft. 12 ft. high Western Michigan College of Educ., from M. C. J. Billingham, 211 Woodward St., **$729,000**, alt. **$764,375.** CD 10/2.

Minn., Mankato—SCHOOL—State, Dpt. Admin., State Capitol, St. Paul, Oct. 26, general contract classroom addn. at State Teachers College, from Hagstrom Constr. Co., 1567 Selby Ave., St. Paul, **$864,000.** CD 10/4.

N. Y., Wassaic—POWER HOUSE HEATING FACILITIES—Bureau Contracts & Accounts, Albany, Nov. 1, heating facilities at power house (Bldg. 26) for Wassaic State School, from Whitney-Dierks Heating Corp., 4 Liberty St., Poughkeepsie, **$449,990.** CD 7/20/45.

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N. C., Leaksville—HIGH SCHOOL—Leaksville Twp. School Bd., Leaksville, rejected bids Oct. 27, Central High School. L. B. **$912,721.**

▲ **N. C., Winston-Salem**—HOUSING—Winston-Salem Housing Auth., 1205 Reynolds Bldg., rejected bids Sept. 26, Happy Hills Gardens, housing. L. B. **$1,635,351.** Will re-advertise. CD 10/4, under LB.

N. C., Winston-Salem—SCHOOL—City, City Hall, N. Main St., Oct. 26, Kimberly Park School, from Fowler-Jones Constr. Co., Reynolds Bldg., **$291,850.** CD 10/5.

Pa., Lewiston—SCHOOL—Pub. School Bldg. Auth., 1400 N. Cameron St., Harrisburg, Nov. 2, general contract school for Lewistown Boro School Dist., from J. C. Orr & Son, 438 Seventh Ave., Altoona, **$453,700.** Est. $500,000. CD 10/11.

▲ **R. I., Cranston**—SCHOOL—City, City Hall, Nov 3, school, Gladstone St. from Westcott Constr. Co., 42 Weybosset St., Providence, **$1,348,533.** CD 10/25.

Va., Petersburg—HOME ECONOMICS—State of Virginia, Richmond, Nov. 2, home economics bldg. at Virginia State College for Negroes, from Harwood Constr. Co., Newport News, **$420,000.** CD 10/12.

▲ **Wash., Richland**—MILITARY CONSTRUCTION—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, military construction Serial No. 51-55, from Waale-Camplan Co., 2100 S. W. Jefferson St., Portland, Ore., **$657,127.** Est. **$647,500.**

Ont., Toronto—SCHOOL—North York Twp. Collegiate Bd., 5145 Yonge St., Willowdale, Oct. 31, Composite High School, Lawrence Ave. W., from Redfern Constr. Co. Ltd., 88 Laird Dr., Leaside. Approx. **$850,000.** CD 10/13.

CONTRACTS AWARDED

Calif., Glendale—STEAM GENERATING UNIT—City Council, City Hall, furnishing, del., erecting steam generating unit, to C. C. Moore & Co., 450 Mission St., San Francisco, **$552,147.** Bids 10/13, awarded 11/2. Howard Gulick, ch. engr. and gen. mgr.

▲ **Calif., San Francisco**—COLLEGE OF LAW—Bd. Regents, University of California, Berkeley, general contract rein.-con. Hastings College of Law, to Monson Bros., 475 6 St., **$1,010,900.** Bids 10/10. CD 10/17, under LB.

▲ **Calif., Santa Monica**—COLLEGE BLDGS.—City, Bd. Educ., 1333 Sixth St., Santa Monica College bldgs., incl. 1 story, rein.-con admission bldg., 1 story, rein.-con. library, 2 story, rein.-con. classroom bldg., 1 story,- rein.-con. cafeteria, two 1 story art bldgs., 1 story rein.-con. music bldg., to Alliance Constr. Co., 35 N. Raymond St., Pasadena, **$1,433,990.** Est. $1,250,000. Bids 7/27, awarded 8/51. CD 8/1, under LB.

Calif., Walnut Creek—SCHOOL—Ancalanes Union High School Dist. Lafayette, 1 story, structural steel, wood Walnut Creek High School, to Haas & Rothschild, 274 Brannon St., San Francisco, **$646,997.** Bids 10/10. CD 10/17, under LB.

Conn., Norwich—POWER PLANT—State, R. S. Thatcher, comptroller, State Capitol, Hartford, power plant at Norwich State Hospital, B/A-K-51, to F. H. McGraw Co., 720 Windsor St., Hartford, **$672,445.** Bids 10/31. CD 10/15.

Fla., Orlando—HOUSING—Orlando Housing Auth., Orlando, Reeves Terrace Housing addn., to Gates-Ragsdale Constr. Co., 1523 Grand Central Ave., Tampa, **$660,000.**

▲ **Fla., Tallahassee**—SANITORIUM—State Tuberculosis Bd., Tallahassee, main hospital and heating plant of W. T. Edwards Tuberculosis Sanitorium, to Beers Constr. Co., 70 Ellis St. N. E., Atlanta, Ga., **$1,111,111.** Bids 11/1, awarded 11/3. CD 11/6, under LB.

▲ **N. C., Wilson**—HOSPITAL—North Carolina Sanatorium, Dr. H. F. Easom, Medical Dir., Wilson, general contract service bldg., colored unit (hospital wing) and nurses residences to Jones Bros., Wilson, **$1,702,044.** Bids 10/6. CD 10/20, under LB.

O., Youngstown—HOSPITAL—Dpt. P. Wks., S. O. Linzell, dir., Ohio Dpts. Bldg., Columbus, 120 bed addn. to Youngstown Receiving Hospital in E. Indianola Ave., to Felix Pesa & Son Co., 745 Andrews Ave., **$594,493.** Est $798,700. Bids 10/18. CD 10/25, under LB.

R. I., Scituate—SCHOOL—Town, School Dpt., Main St., school addn., alterations at North Scituate, to E. J. Hollen, 222 Waterman St., Providence. **$800,000.** Awarded 11/2. CD 11/6, under LB.

▲ **Que., Ste. Foy (Quebec City)**—HOSPITAL—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., veterans hospital (Phase No. 4), to A. Deslauriers & Fils Ltd., 68 Lal-ment St., Quebec City, Approx. **$4,777,012.** Bids 9/20. CD 10/18, under LB.

COMMERCIAL BUILDINGS

BIDS ASKED

▲ **Wis., Milwaukee**—COLLEGE UNITS—B.A. 11/21—School Sisters of St. Francis, 1501 S. Layton Blvd., 5 units Alverno College, $3,000,000. Extended date. Maguolo & Quick, 498 Delmar Blvd., St. Louis, Mo., archts. and engrs. CD 8/25.

S. D., Rapid City—CHURCH—B.A. 11/24—First Prysbyterian Church, Rapid City, church. $300,000. Lang & Raugland, Wesley Temple Bldg., Minneapolis, Minn., archts. CD 1/17.

Wash., Tacoma—MUSIC—B.A. 11/27—College of Puget Sound, 1500 N. Warner St., music bldg. $350,000.

Plans deposit $25. Dugan, Mock & Morrison, Perkins Bldg., archts.

La., Algiers—THEATER—B.A. 12/15—At office of Patrick M. Allison, archt., 315 St. Charles St., New Orleans, stadium type, steel Class A, masonry theater Teche Ave., for Powers Theater, Inc., Algiers. Plans deposit $25. Extended date. CD 10/13.

▲ **Ind., Fort Wayne**—HOSPITAL—B.A. January—Donald C. Carner, genl. supt., Parkview Hospital, 217 E. Washington St., Fort Wayne, Parkview Memorial Hospital, $3,000,000. A. M. Strauss, Strauss Bldg., archt. CD 6/20/45.

Mich., L'Anse—HOSPITAL—B.A. 1/17—Baraga County Memorial Hospital, Ben J. Grobaski, chn. Baraga Co. Hospital Bd., brick, steel hospital. Extended date. Plans deposit $25, refundable to bidders, Joseph C. Goddeyne, Bay City Bank Bldg., Bay City, archt. CD 10/6.

Ill., Chicago—APARTMENTS—Bids Asked—Mid-Central Co-operative Builders, 127 N. Dearborn St., Zone 2, six 4 unit each brick, 2 story apartments. $250,000. Bartlett, Watts & Rosene, 232 E. Erie St., Zone 11, archts.

▲ **Tex., Houston**—HOME FOR AGED—Bids Asked—Holly Hall, Inc., Shell Bldg., home for the aged. $1,000,000. Cameron Fairchild, 2628 Westheimer Rd., archt. CD 9/16/49.

SOON LETS CONTRACT

Calif., Fresno—HOME—Poor Sisters of Nazareth, c/o Vincent Buckley, archt., 165 Post St., San Francisco, soon lets contract, 1 story home for the aged. $250,000.

Ill., Chicago—BANK—Harris Trust & Savings Bank, 111 W. Monroe St., Zone 3, soon lets contract bank alterations, $300,000. Skidmore, Owings & Merrill, 100 W. Monroe St., Zone 3, archts.

Mass., Milford—SCHOOL, etc.—Sacred Heart of Jesus Parish, Rev. Della Porter, pastor. E. Main St., soon lets contract, brick, steel, concrete Parochial School and convent. $300,000. Anthony De Pace, 151 W. 6 St., **New York, N. Y.**, archt.

Minn., Duluth—HOUSING—Highland Acres Co-operative Housing Assn., L. O. Selbak, mgr., 310 Bradley Bldg., soon lets contract, seventy-five, 1 story, bsmnt., housing Stowe St. to Perry St. $500,000. P. Burrell, 107 N. Ave. W., archt.

O., Bellevue — HOSPITAL — Bellevue Hospital Assn., Charles B. Dillon, pres., Bellevue, soon lets contract, 2 story, bsmnt. hospital. $336,000. Bellman, Gillett & Richards, 518 Jefferson St., Toledo, archts. CD 5/1/47.

Tex., Columbus—HOTEL—Santa Anna Hotel, c/o E. E. Irwin, Columbus, soon lets contract, masonry hotel, air-conditioned. $250,000. Stanley W. Bliss, 818-19 Littlefield Bldg., Austin, archt.

Tex., Dallas—CHURCH—Oak Cliff Methodist Church, 549 E. Jefferson St., soon lets contract 2 story church. $250,000. Plans deposit $25. Broad & Nelson, 618 Reserve Loan Life Bldg., archts. CD 10/30.

LOW BIDDERS

Mont., Helena—SCHOOL—St. Helena Cathedral, Helena, rejected bids Oct. 14, general contract high school. L. B. **$533,517**. Will re-advertise. CD 10/20.

Nev., Reno—OFFICE—Onslow Dodd, c/o Paul C. Overmire, archt., 79 Post St., San Francisco, Calif., rejected bids 4 story bsmnt., 50,000 sq. ft., rein.-con., steel commercial office. L. B. **$625,726**. CD 10/31, under LB.

▲ **N. M., Albuquerque**—HOSPITAL—Bataan Memorial Methodist Hospital, 1621 E. Central Ave., Oct. 11, general contract 115-bed masonry, steel hospital, concrete cassion, pier frame, from Robert E. McKee, P. O. Box 1706, Santa Fe, **$849,900**; plumbing and heating from E. O. Stice Co., Box 955, Santa Fe, **$357,000**. CD 9/26.

▲ **Tex., Dallas**—OFFICE—Leo F. Corrigan, Mercantile Bank Bldg., cancelled bids, 17 story, bsmnt. office. **$5,000,000**. CD 10/5.

CONTRACTS AWARDED

Calif., Hayward—RESIDENCES—F. L. Leonardo & Son, 2108 W. 132 Ave., San Leandro, 45 residences, Chenault Way and Odom Dr. Owner builds. **$303,200**.

Calif., La Habra—DWELLINGS—Mac-Bright, 5655 Wilshire Blvd., Los Angeles, 92 frame, stucco dwellings, LaMirada St., Laguna, and Lindaner Drives, to Kenneth C. Albright, 5655 Wilshire Blvd., Los Angeles. Approx. **$564,200**.

Calif., Palo Alto—DORMITORY—Regents, Stanford University Palo Alto, rein.-con. Crothers Hall dormitory addn., to Wagner & Martinez, 181 S. Park St., San Francisco, **$294,627**. CD 7/27.

Calif., San Lorenzo—RESIDENCES—Sunnybilt Homes Corp., 15299 Beatty St., 64 residences, W. Ave. 153, W. Ave. 152, W. Ave. 154 and Norton St. Owner builds. **$531,000**.

Calif., San Pablo—RESIDENCES—Mack Constr. Co., 1344 San Pablo Ave., El Cerrito, 50 residences in Parchester Village 1, near here, to E. W. Smith Inc., 4 Stratford Rd., Berkeley. Approx. **$306,330**.

Ill., Chicago—GYMNASIUM—Catholic Bishop of Chicago, 720 N. Wabash St., Zone 11, 119x125 ft. gymnasium, 3546 N. Paulina St., Zone 18, to Warner Constr. Co., 5801 N. Clark St., Zone 40, **$250,000**. Awarded 10/26. L. A. Gilatto, 5801 N. Clark St., Zone 4, archt.

Ill., Chicago—HOUSING—Hyland Bros. Corp., 864 N. LaSalle St., Zone 10, five 4 unit, 60x50 ft. housing

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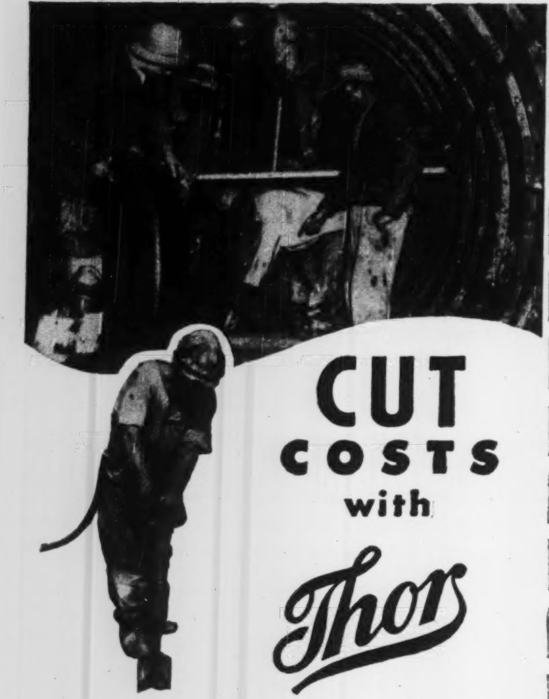

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5300 N. California St., Zone 45. Owner builds. **$250,000.** Awarded 10/30. R. H. Schoenbrod & Assocs., 864 N. LaSalle St., Zone 10, archts.

Ill., Chicago—APARTMENT—Olmour Corp., 1333 N. Wells St., Zone 10, 3 story 45 unit, concrete framing, brick apartment, 6455 N. Sacramento St., Zone 45, to Robin Constr. Co., 1333 N. Wells St., Zone 10, **$250,000.** Awarded 10/30. Wm. M. Cooley, 162 N. Clinton St., Zone 6, archt.

Ill., Chicago—RESIDENCES—Schuknecht & Kelly, 3550 Fullerton St., Zone 47, 30 residences, at 5000-5056 and 5001-5057 North Monclare St., Zone 30. Owner builds. **$285,000.** Awarded 10/30. B. J. Bruns, 4735 N. Hermitage St., Zone 40, archt.

Ind., Noblesville—HOUSES—National Homes Corp., Noblesville, 100 houses, northeastern part of city. Owner builds. **$700,000.**

▲ **Miss., Biloxi**—HOUSING—Wilkinson, Sowden & McGehee, Commerce Title Bldg., Memphis, Tenn., 580 unit, brick veneer, housing, concrete slab fdn., own forces. **$5,000,000.** H. D. Shaw & Assoc., M. Salloun Bldg., Gulfport, engrs.

Mo., St. Louis—FACULTY—Managers of Roman Catholic Orphan Asylums of St. Louis, c/o Carroll & Dean, archts., 5473 Delmar Blvd., Zone 12, 3 story, part bsmnt., 69x111 ft., brick, concrete, stone faculty bldg. for Leboure Catholic High School, 5415 Thekla Ave., to Michael J. Lawler, 5632 Terr Ave., Zone 20.

Mo., University City (St. Louis 5, P.O.)—DWELLINGS—Overland Building Co., 9128 St. Charles Rock Rd., Rd., Overland, Zone 14, eighteen 26x35 ft., brick dwellings, incl. concrete fdns. in 8600 block of Elmore Ave., own forces. **$250,000.** Dan Mullen, 2417 Woodson Rd., Overland, Zone 14, archt.

▲ **N. J., East Orange**—APARTMENT—Glenwood Realty Co., c/o Kelly & Gruzen, archts., 80 Fifth Ave., New York, 3, N. Y., 10 story apartment, at Glenwood Ave. and Washington St. Owner builds. **$1,750,000.**

N. J., Glen Rock—HOUSES—G. & G. Constr. Co., c/o Leonard Feinen, archt., 320 Lincoln Ave., Hasbrouck Heights, 60 one-family houses, on 26 acre site, Prospect St. Owner builds. **$600,000.**

▲ **N. J., Hohokus**—HOUSES—Public Constr. Co., c/o Leonard G. Feinen, archt., 320 Lincoln Ave., Hasbouck Heights, 72 houses to be called Beechwood Gardens on Race Track Rd. Owner builds. **$1,000,000.**

N. Y., Far Rockaway—APARTMENT—Isaac & Sheldon Solow, c/o Samuel Paul, archt., 163-18 Jamaica Ave., Jamaica, garden apartment proj. on 2 acre tract at Beach 29 St., Dwight and Bessemund Aves. Owner builds. Approx. **$600,000.**

N. Y., Freeport—HOUSES—Freeport Woods Homes, c/o Sterling Palm, archt., 110-01 63 Dr., Forest Hills, 32 one family houses in tract, King and Davis Sts. Owner builds. Approx. **$500,000.**

▲ **N. Y., Hicksville**—HOUSES—Plainview Country Homes, c/o John W. Burton, archt., 163-18 Jamaica Ave., Jamaica, 150 houses on tract at Old Country Rd. and South Cyster Bay Rd. Owner builds. Approx. **$1,500,000.**

▲ **N. Y., Inwood**—HOUSES—Shore Crest Gardens, Inc., c/o contractor, 400 one family houses on 58 acre tract on Healy Ave. and Finger Island Rd., to Sam Getz Constr. Co., 10-76 Gypson St., Far Rockaway, Approx. **$3,500,000.**

▲ **N. Y., Kings Point**—HOUSES—Paul M. Jeffrey, c/o Simeon Heller, archt., 135-45 Roosevelt Ave., Flushing, 35 houses on tract, Remsen and Rogers Rds. Owner builds. Approx. **$1,000,000.**

▲ **N. Y., Plainedge (P. O. Farmingdale)**—HOUSES, etc.—Syndicate c/o Jerome Walk, 89-31 16 St., Jamaica, 800 houses and shopping center on 175 acre tract, Seamen's Neck Rd. and Massapequa-Hicksville Rd. Owner builds. Approx. **$10,000,000.**

▲ **N. Y., Wantagh**—HOUSES—Flower Homes, c/o Matern & York, archts., 90-04 161 St., Jamaica, 130 houses, on 33 acre tract bordering Wantagh and Jerusaleum Aves. Owner builds. Approx. **$1,500,000.**

O., Akron—HOUSING—Harry C. Long, 1777 W. Market St., 15 ranch-type homes, on West Hill north of Shatto Ave. and east of Pershing Dr. Owner builds. **$270,000.**

O., Columbus—STOREROOMS—Don M. Casto, 145 N. High St., 8 storerooms, Maplewood Ave. and E. Broad St., in Town and Country Drive-In Shopping Center. Owner builds.

Tex., Dallas—OFFICE—Baptist Foundation of Texas, The Relief & Annuity Bd., SBC, Baptist Bldg., 4 story bsmnt. office to Inge-Hayman Constr. Co., 2326 N. Beckley St., **$685,000.** Est. $600,000. Bids 9/29. CD 9/19.

Tex., Houston—DWELLINGS—John A. Lomax, Jr. and J. M. Frost, Jr., N. Esperson Bldg., 54 dwellings. Owner builds. Approx. **$400,000.** CD 10/25.

▲ **Wash., Spokane**—HOUSES—Murphy-Favre Mortgage Co., Columbia Bldg., general contract 168 houses in Pineview Addn. on north side, to J. Burchell, E. 13325 15 St., Opportunity, and M. K. Stoldz, E. 1012 Augusta St., Spokane, Est. **$1,500,000.** Thomas, Grainger & Barr, Arcade Bldg., Seattle, Zone 1, archts. CD 11/3.

Alta., Edmonton—Y.M.C.A. BUILDING—Y.M.C.A., Edmonton, steel, brick, concrete Y.M.C.A. Bldg. addn., 102 A Ave. and 100 A St., to Bennett & White of Edmonton Ltd., 11239 82 St., Approx. **$300,000.** Dewar, Canton & Stevenson, 618 Northern Hardware Bldg., archts. CD 2/7/46.

▲ **N. S., Halifax**—RECREATION CENTER—Y.M.C.A., 119 Queen St., 4 story, 126 ft. at rear, 113 ft. at front, 145 ft. in depth, rein.-con., steel, brick, stone recreation center, to Kenney Constr. Co., Ltd., Box

380, Yarmouth, Approx. **$1,166,503**. C. A. Fowler & Co., Capitol Bldg., Halifax, archts. CD 12/29/48.

Ont., Kingston—TELEPHONE EXCHANGE—Bell Telephone Co. of Canada, 76 Adelaide St. W., Toronto, 2 story, bsmnt., two wings, concrete, brick, Kingston telephone exchange addn., to T. A. Andre & Sons Ltd., 580 Brock St., **$250,000**. Awarded 11/1. Ross, Paterson, Townsend & Heughan, 1010 St. Catherine St., W., Montreal, Que., archts. F. A. Williams, Bell Telephone, staff archt.

Ont., Kingston—RESIDENCE—Queens University, Kingston, Ban Righ Hall, Women's residence addn., Queens University, to M. Sullivan & Sons, 234 Elgin St., Arnprior, Approx. **$800,000**. Drever & Smith, 81 Brock St., archts. CD 4/26/46.

Que., Mount Royal (Postal Dist. Montreal)—CHURCH, etc.—Roman Catholic Parish of St. Joseph, Mount Royal, concrete, steel, stone church and presbytery, to D. Boileau Ltd., 705 Beaumont Ave., Montreal, **$583,000**. Chas. Grenier, 170 Geneva Cres., Mount Royal. archt.

INDUSTRIAL BUILDINGS

BIDS ASKED

Ga., Clarkesville—MILL—B.A. 11/21—United Merchants & Manufacturers Inc., c/o Robert & Co. Assoc., 96 Poplar St. N.W., Atlanta, rayon weave mill. Approx. $500,000.

Ill., Barrington—WAREHOUSE—B.A. 11/24—Jewel Tea Co., Jewel Park, 40,000 sq. ft. warehouse. $300,000. Holabird & Root & Burgee, 180 N. Wabash St., Chicago, Zone 1, archts.

Calif., Los Angeles—CAR WASH, etc.—B.A. 11/28—Bd. Supervs. Los Angeles Co., 501 Hall of Records, car wash and lubrication bldg. $50,000. R. E. Shonerd, engr.

▲ **O., Tiffin**—FACTORY—B.A. 11/28—American Radiator & Standard Sanitary Corp., Bessemer Bldg., Pittsburgh, Pa., factory addns., warehouse addn., cast shop, present bldgs. alterations, office addn. etc. $1,000,000. Prack & Prack, Martin Bldg., Pittsburgh, Pa., archts. CD 9/14.

▲ **Neb., Omaha**—CHEMICAL PLANT—B.A. 11/30—Quaker Oats Co., Merchandise Mart, Chicago 54, Ill., chemical plant. $1,000,000. Vern Alden, 120 S. La Salle St., Chicago 3, Ill., engr. CD 10/24.

Ia., Davenport—WAREHOUSE—B. A. 12/12—Omar, Inc., 1910 Harney St., Omaha, Neb., branch warehouse, $125,000. A. B. Corn, c/o owner, engr. CD 10/30.

Ill., Chicago—FACTORY—Bids Asked—Cinch Mfg. Co., 1026 S. Homan St., Zone 24, 5 story, brick, stone, steel factory, front alterations, addn. $350,000. A. E. Ruby, Jr., Woodstock, archt.

Ill., Skokie—FACTORY—Bids Asked—J. C. Paul & Co., Oakton and Ridgeway Sts., 100x100 ft., factory, $80,000. A. R. Hauser, 201 N. Wells St., archt.

SOON LETS CONTRACT

Minn., Minneapolis—PARKING GARAGE—At office Larson & McLaren, archts., 1901 Foshay Tower, and D. L. Briegel & Assoc., assoc. archts. and engrs., 302 McKerchey Bldg., Detroit, Mich., soon lets contract 4 story, six levels parking garage, Marquette Ave. and 4 St. $600,000. CD 8/31.

▲ **Neb., Omaha**—PLANT—Quaker Oats Co., Merchandise Mart, Chicago 54, Ill., soon lets contract branch plant. $1,000,000. Vern E. Alden Co., 120 S. La Salle St., Chicago 3, Ill., engr. and archt. C. A. Money, c/o owner, engr. CD 10/24.

Pa., Villanova—BOILER HOUSE—Villanova College, Villanova, soon lets contract boiler house and radial brick stack. $600,000. Gilboy & O'Malley, Mears Bldg., Scranton, Zone 3, consulting engineers in charge. (**Correction**—engineers). CD 10/25.

R. I., Providence—STORAGE BLDG. OFFICES—Kraft Foods Co., 500 N. Pestigo St., Chicago, Ill., soon lets contract rein.-con. storage bldg. offices, 57 Bucklin St. $125,000. Olson & Urbain, 5 S. Wabash St., Chicago, Ill., archts.

Tex., Galveston—GARAGES—Pennington Buick Co., 1305 23 St., soon lets contract 2 garages. $225,000. Ben Milam, 300 Stewart Bldg., archt. CD 11/3.

LOW BIDDERS

Ill., Greenville—WAREHOUSE, etc.—Southwestern Electric Co-operative, V. C. Kallal, mgr., Greenville, Oct. 17, brick, concrete warehouse, garage shops and office, with all services, drives, parking area, etc., from Raym M. Dilschneider, Inc., 8600 Manchester Rd., Brentwood, St. Louis, 17, Mo., **$149,900**. CD 10/6. J. G. Harms, 440 S. Brentwood Blvd., Clayton, St. Louis, 5, Mo., archt. Rural Line Engineers, 440 S. Brentwood Blvd., Clayton, St. Louis, 5, Mo., engrs. CD 10/6.

CONTRACTS AWARDED

▲ **Calif., Maywood**—FACTORY, etc.—Baker Oil Tools, Inc., 6000 S. Boyle Ave., 1 and part 2 story, steel factory and office, to E. S. McKittrick Co., Inc., 7839 Santa Fe Ave., Huntington Park, Approx. **$1,300,000**. Est. $700,000. Awarded 9/15. CD 7/25.

▲ **Calif., South Gate**—WAREHOUSE—Firestone Tire & Rubber Co., 252 Firestone Blvd., 110,000 sq. ft., concrete warehouse, to Oltman's Constr. Co., 810 E. 18 St., Los Angeles. **$1,034,000**. Justin A. Shjarback, 1312 S. Garfield St., Alhambra, engr.

Ga., Atlanta—PLANT—Kraft Foods Co., 500 Peshtigo Court, Chicago, Ill., processing and distr. plant, to Corbetta Constr. Co., c/o owner. Approx. **$300,000**. CD 10/27.

Ill., Chicago—PLANT—Cromwell Paper Co., 3048 W. 48 Pl., Zone 32, 24,000 sq. ft., steel, brick, concrete plant, to Heidel & Beck, 6235 S. Michigan St., Chicago, Zone 37, **$145,000**. Awarded 10/30 A. Epstein & Sons Co., 2011 Pershing Rd., Zone 9, archts.

Ill., Chicago—FACTORY—Precision Steel Co., 4401 W. Kinzie St., Zone 24, 8,000 sq. ft. factory, to Russell Peacock Constr. Co., 340 W. Harrison St., Zone 5, **$68,000**. Awarded 10/30 J. T. Fisher, 5332 Mulford St., Skokie, archt.

Mass., Dorchester—MANUFACTURING—Recording & Statistical Corp., 183 Essex St., Boston, office, mfg. bldg., and printing plant, 55 Old Colony Parkway, to Aberthaw Co., 80 Federal St., Boston, **$500,000**. Awarded 10/10. CD 10/2.

Mass., Malden—MANUFACTURING—K. J. Quinn & Co., Inc., 481 Canal St., mfg. bldg., Canal St., to C. A. Dodge Co., 2 Erie St., Cambridge, **$250,000**. Awarded 10/10. Cleverdon Varney & Pike, 120 Tremont St., Boston, engrs.

Mich., Detroit—FACTORY—Midland-Steel Products Co., 6660 Mt. Eliot St., altering brick factory, Bldgs. 1 and 20, Mt. Eliot St., to Perron Constr. Co., 6525 Lincoln St., approx. **$75,000**. Laucomer & Manser, 4895 Grand River, engrs.

▲ **Minn., Hopkins**—PLANT—Merchants Refrigeration Co., 17 Varick St., New York, N. Y., general contract 1 story, 240x520 ft., brick cold storage plant, to Turner Constr. Co., 105 W. Adams St., Chicago, Ill., approx. **$1,250,000**. CD 8/31.

▲ **Mo., Kansas City**—MOTOR TRUCK SALES & DISTRIBUTION—International Harvester Co., 180 N. Michigan St., Chicago 1, Ill., 1 and 2 story, 120,000 sq. ft., steel, concrete, brick, motor truck sales and distr. bldg., to Morris Hoffman Constr. Co., Victor Bldg., **$1,000,000**. Awarded 10/23. CD 7/11.

Mo., St. Louis—TRUCK TERMINAL—Roy A. Brashear, 503 S. Theresa Ave., Zone 3, 1 story, 50x131 ft., brick, concrete truck terminal, 3555 Scott Ave., for Brashear Truck Co., to W. C. Harting Constr. Co., 722 Chestnut St., Zone 1, F. R. Nauman, 714 N. Woodlawn Ave., Kirkwood, St. Louis, Zone 19, archt.

Mo., St. Louis—WAREHOUSE, etc.—North & South Realty & Investment Co., 4343 Clayton Ave., Zone 10, 1 story, 158x190 ft., brick, concrete warehouse and office, 5025 Pattison Ave., to I. E. Millstone Constr. Co., 4343 Clayton Ave., Zone 10, **$125,000**, C. C. Price, 705 Chestnut St., Zone 1, engr.

Neb., Lincoln—PLANT—Goodyear Tire & Rubber Co., 1144 E. Market St., Akron, O., branch plant addn. to Clemmer Constr. Co., Inc., 134 E. Thornton St., Akron, O., approx. **$500,000**. William Watters, owner, ch. engr. CD 7/27.

N. Y., New York—STORAGE—Summit Holding Co., 285 E. 137 St., Zone 54, 1 story storage, Bruckner Blvd., east of Lincoln Ave., separate contracts. Approx. **$100,000**. CD 9/11.

O. Cincinnati—BAKERY PLANT—Continental Baking Co., 168 Douglas Ave., New York, N. Y., general contract bakery plant, Richmond Rd. to Frank Messer & Son, 4612 Paddock St. Total est. **$200,000**. CD 4/5.

O., Cleveland—BAKERY PLANT—Continental Baking Co., 168 Douglas Ave., New York, N. Y., bakery plant, Clark Ave. and 20 Pl., to George Rutherford Co., 2725 Prospect St., approx. **$282,000**. Bellman, Gillett & Richards, 518 Jefferson St., Toledo, archts.

Ore., Hinkle—TERMINAL BUILDINGS, etc.—Union Pacific R. R., W. C. Perkins, ch. engr., 1416 Dodge St., Omaha 2, Neb., 5 major buildings at new terminal, to George H. Buckler Co., 4235 S. E. 17 St., Portland, 6 overhead structures at new terminal, to Morrison-Knudsen Constr. Co., Inc., 319 Broadway, Boise, Idaho. Awarded 10/31.

Tenn., Memphis—WAREHOUSE—Wagner Electric Co., Suzette and St. Paul Sts., 1 story, 130x140 ft., masonry, steel warehouse to E. W. G. Meers Constr. Co., 166 Monroe Ave., **$72,000**. Est. $75,000. Awarded 11/2, E. L. Harrison, 81 Madison Bldg., archt.

Tenn., Nashville—WAREHOUSE, etc.—Clements Paper Co., c/o contractor, warehouse and office, to Boone Contg. Co., 3rd Natl. Bank Bldg. Approx. **$330,000**.

Tex., Abilene—REFINERY—Onyx Refining Co., Abilene, platforming unit for refinery expan., force account. **$600,000**. Est. $650,000. CD 10/25.

Tex., Dallas—PLANT—General Portland Cement Co. Republic Bank Bldg., Unit 3, cement plant expansion, own forces. **$450,000**. CD 4/7.

Wash., Camas—MILL, etc.—Crown Zellerbach Corp., Public Service Bldg., Portland, Ore., wood mill addn. and 2 chip storage silos, to L. H. Hoffman, 715 S.W. Columbia St., Portland, Ore., **$400,000**. Awarded 11/1, General Eng. Co., Central Bldg., Seattle, Wash., engr. CD 1/17.

Que., Cap de la Madeleine—PLANT—St. Regis Paper Co. (Canada), Ltd., St. Lawrence St., 1 story, 60x100 ft., rein.-con., steel plant addn., to Labrador Constr. Co. Ltd., 5000 13 Ave., Rosemont, Montreal. **$75,000**. Bids 5/3. CD 4/26.

Ont., Forest—CREAMERY—Forest Co-operative Creameries, Forest, 1 story, steel, brick, tile creamery and cold storage unit to G. S. Passmore & Sons, 416 Nelson St., Sarnia, Approx. **$85,000**. CD 9/20.

UNCLASSIFIED

BIDS ASKED

New Jersey—TOLL BOOTHS, etc.—B.A. 11/27—At office Chief Engineer Port of New York Authority, 111 8 Ave., New York, 11, N. Y., toll booths and canopy and installing floodlights at the New Jersey Plaza of Holland Tunnel, Contr. HT-7. Plans deposit $10.

† **California**—STRUCTURAL STEEL—B.A. 11/28—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Newman, Calif., structural steel incl. beam, diaphrams bearings, ribbed bolts for farm bridge Newman Wasteway, Station 55, Delta Mendota Canal, Central Valley Proj., Spec. DS-3237. L. N. McClellan, ch. engr.

Ont., Thornbury—PIER—B.A. 11/29—Acting Secy. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., pier. Approx. $125,000. Plans deposit $25. R. Blais, c/o owner, engr.

Que., Grande Riviere—HARBOR IMPRVS.—B.A. 11/29—Acting Secy. P. Wks., Hunter Bldg., Ottawa, Ont., protection works. Plans deposit $20. R. Blais, c/o owner, engr. CD 3/3.

California—HIGHWAY LIGHTING—B.A. 11/30—State Div. Hys., 120 S. Spring St., Los Angeles, highway lighting on Figueroa St., Arroyo Seco Freeway between College and Glenarm Sts., Los Angeles, South Pasadena and Pasadena, Los Angeles Co. G. T. McCoy, Sacramento, state hy. engr.

† **Oregon**—TRASH BOOM—B.A. 11/30—U. S. Eng., 628 Pittock Block, Portland, Zone 5, trash boom at head of Bradford Island fish ladder at Bonneville Dam, Serial No. CIVENG 35-026-51-104.

Tex., Hemphill—ELECTRICAL DISTRIBUTION SYS.—B.A. 11/30—City, Hemphill, exten., imprv., electrical distr. sys. $250,000. Garrett Eng. Co., 5008 Almeda Rd., Houston, engr. CD 8/18.

† **Alaska**—STRUCTURAL STEEL—B.A. 11/30—Bureau Reclamation, Dpt. Interior, Bldg 1-A, Denver Federal Center, Denver Colo., furnishing, del. f.o.b. cars shipping point, or f.o.b. cars Seattle, Wash., structural steel; corrugated-steel sheets for wall covering, window, glass, spring wire, glazing clips, doors, crane rails, splice bars, hook bolts, track bolts, crane bumpers, rail accessories, hardware, anchor bolts, bolts, and nuts, washers, machine screws, rivets, fastenings and materials for metal flashing for steel warehouse bldg. etc. at Eklutna Government Camp, Eklutna Proj., Spec. No. DS-3234.

† **Nebraska**—REMOVING RAILROAD FACILITIES—B.A. 12/5—U. S. Eng., 601 Davidson Bldg., Kansas City, Mo., removing railroad facilities, Oxford Branch, Part 1, Harland Co., CIVENG 23-028-51-44. CD 11/6.

† **New Mexico**—TRANSFORMERS, etc.—B.A. 12/5—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Albuquerque, out-door distr. transformer; outdoor power circuit breaker; grounding switch; horn-gap switch; outdoor disconnecting switches; outdoor disconnecting fuses; base mounted lightning arresters; outdoor potential transformers; outdoor current transformers for Albuquerque sub-station, Rio Grand Proj., New Mexico-Texas. Spec. No. DS-3226.

Fla., Miami—SWIMMING POOL—B.A. 12/6—City, c/o Director Dpt. Engineering, 321 Court House, swimming pools in Shenandoah Park and West End Park.

† **Washington**—TUNNEL—B.A. 12/7—Bureau Reclamation, Dpt. Interior, Ephrata, Wash., constr. West Canal-Frenchman Hills Tunnel, Station 3119 plus 74.27 to Station 3258 plus 00 Columbia Basin Proj., approx. 20 mi. south of Quincy, Spec. DC-3235., adv. ENR 11/16.

† **Oregon**—TRACK—B.A. 12/12—U. S. Eng., Pittock Block, Portland, approx. 1.5 mi. track for Southern Pacific Co. in vicinity of Meridian Dam Lane Co., CIVENG 36-026-51-98.

Ont., Toronto—SUBWAY—B.A. 12/15—Toronto Transportation Comn., W. C. McBrien, chn., 35 Yonge St., Zone 1, Yonge Street Subway, Contr. S-5A. Plans deposit $100. CD 1/9/46.

Ont., Toronto—SUBWAY SIGNAL EQUIPMENT—B.A. 1/30—Toronto Transportation Comn., 35 Yonge St., Yonge Street Subway Signal Equipment and installation, Contr. SG. CD 1/9/46.

LOW BIDDERS

Calif., Napa—EXHIBIT BLDG.—State Div. Architecture, P. Wks. Bldg., Sacramento, Oct. 31, 20,000 sq. ft., rein.-con. exhibit bldg., concrete floriculture bldg., rein.con., steel grandstand for 25th District Agriculture Assn., from J. A. Bryant, 1806 Capitol St., Vallejo, **$259,500**. CD 10/10.

† **D. C., Bellevue**—PIPING, etc.—Pub Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash., D. C., Nov. 1, piping and equip. and boiler plant modifications and converting 3 boilers from coal to fuel oil burning type in Bldg. 5 at Naval Research Laboratory, from Harry R. Byer, Inc., Shoreham Bldg., Wash., **$106,654**. CD 9/29.

Nebraska—RURAL DISTRIBUTION LINES—Panhandle Rural Electric Membership Assn., Cecil Vickers, pres., Alliance, Oct. 17, 323 mi. 24.9/14.4 kv transmission lines, Arthur, Grant and Cherry Counties, from Cater Electrical Constr. Co., 1016 Baltimore Ave., Kansas City, Mo., **$407,145**. CD 9/18.

N. Y., Massepequa—PARKING FIELD—Town Bd., Town Hall, rejected bids Oct. 24, parking field. CD 10/18.

Oklahoma—RURAL DISTRIBUTION LINES—Southeastern Electric Co-operative Assn., Durant, 460 mi. rural distr. lines, Bryan Co., from R. D. Cooper Constr. Co., Istrouma Hotel, Baton Rouge, La., **$690,626**. Est. $710,000. E. R. Taylor & Co., 4107 E. 11 St., Tulsa, engrs. CD 6/8.

Texas—RURAL DISTRIBUTION LINES—Fort Belknap Electric Co-operative, Olney, Oct. 31, rural distr.

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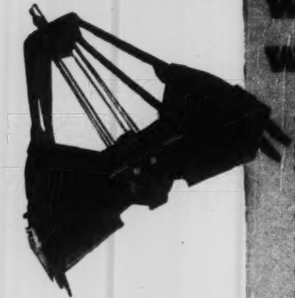

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lines, Young Co., from South Constr. Co., Ardmore, Okla., **$104,382.** CD 10/23.

Texas—RURAL DISTRIBUTION LINES—Sam Houston Electric Co-operative, Inc., Livingston, Nov. 2, 257 mi. rural distr. lines, Polk Co., from Irby Constr. Co., 817 N. 6 St., Jackson, Miss., **$296,117.** Est. $277,000. Lodal & Assoc., 1411 Transit Tower, San Antonio, engrs. CD 10/13.

Tex., Devine—GAS DISTRIBUTION SYSTEM—City, Oct. 28, natural gas distr. sys. transmission lines from K. W. Smith Constr. Co., 7111 Long Dr., Houston, **$95,020.** Est. $100,000. Alamo City Engineers, 3001 Transit Tower, San Antonio, engrs.

Ont., Toronto—RECREATION CENTER—City, Mayor H. E. McCallum, City Hall, 2½ story, 139x173 ft. Moss Park Recreation Center, from George Hardy Ltd., 163 Wicksteed Ave., **$457,068.** Est. $400,000. CD 10/5.

CONTRACTS AWARDED

Ala., Mobile—UNLOADING TOWER—Alabama State Dpt. Docks & Terminal, c/o J. B. Converse & Co., engrs., Box 1084, erecting Traveling Unloading Tower K, to Heyl & Patterson, Inc., 55 Water St., Pittsburgh, Pa., **$534,000.** Bids 10/3. CD 10/26, under LB.

Fla., Miami—MOTOR COURT—A. J. Paul, c/o Nils V. Johnson, archt., 217 N.E. 97 St., motor court, Owner builds, **$136,000.**

Missouri—RURAL DISTRIBUTION LINES—Scott-New Madrid-Mississippi Electric Co-operative, Inc., Sikeston, 178 mi. rural distr. lines in Bollinger, Cape Girardeau, Mississippi, New Madrid, Scott and Stoddard Counties, to Irby Constr. Co., 815 S. State St., Jackson, Miss., **$265,884.** Bids 10/20. CD 10/13.

Nebraska—RURAL DISTRIBUTION LINES—Custer Public Power Dist., Frank Haument, pres., Broken Bow, 423.6 mi. rural distr. lines, Blain, Loup and Custer Counties, to Douglas Contractors, Ltd., Keeline Bldg., Omaha, **$459,289.** Bids 10/26. CD 10/11.

North Dakota—RURAL DISTRIBUTION LINES—James Valley Electric Co-operative, Edgeley, 274 mi. rural distr. lines, LaMoure Co., to T. H. Vicars, 712 8th St. N.W., Minot, **$260,124.** Bids 10/25. CD 10/19.

Tenn., Memphis—MOTEL—W. Lute Casey, 1589 S. Bellvue St., 12 unit, concrete block, brick veneer motel, restaurant, owners residences, to Bryson-Ward Constr. Co., 2414 Chelsea St., **$71,750.** Est. $80,000. Awarded 11/3. Daniel J. McGowan, John Hunt, Assoc., 1502 Union St., archts.

Tex., Denton—UNDERGROUND CABLES—Denton Telephone Co., Denton, Unit 1, laying underground cables, Purchase and Hire. **$150,000.** CD 9/23/49.

Tex., Lufkin—TELEPHONE LINES—Texas Forest Service Fire Control, Dpt., P. O. Box 460, Lufkin, above ground telephone lines, Purchase and Hire. **$65,000.**

Tex., Midland—PARK—City, municipal park, own forces. **$62,250.** Wm. B. Nealey, city eng. staff, engr.

Tex., Midland—GOLF COURSE—Midland Country Club, Midland, 18-hole golf course, own forces. **$80,000.** Ralph Plummer, Dallas Country Club, Dallas, and Homer Pace, 318 N. Colorado St., engrs.

Tex., San Antonio—UNDERGROUND CABLES—Southwestern Bell Telephone Co., Auditorium Circle, Unit 1, underground cables, Southside, force account. **$250,000.** CD 10/25.

Tex., Tyler—POWER and LIGHTING SYSTEMS—Texas Power & Light Co., Tyler, enlarging, exten. power and lighting sys., own forces. **$90,000.** CD 9/15.

† **Washington**—STATION FACILITIES—U. S. Eng., 19 E. Poplar St., Walla Walla, constr. station facilities at Plymouth Berrian, Yellepit and Finley along relocated Spokane, Portland and Seattle Ry., Benton Co., to Henshaw Bros., 2627 N. E. Thompson St., Portland, Ore., **$208,510.** Est. $224,861. Bids 11/1. CD 9/29.

N. S., Debert—FIRE ALARM, etc.—Govt. of Canada, Hunter Bldg., Ottawa, Ont., fire alarm and street lighting, to Annapolis Valley Constr. Co. Ltd., 16 Main St., Truro, **$50,000.**

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WATER SUPPLY

BIDS ASKED

Ia., Bondurant—B.A. 11/28—City, WW sys. $65,000. R. A. Gearhart, Cedar Rapids, engr

S. C. Greer—B.A. 11/28—City, 61,720 lin. ft. 4- to 16-in. c.i. water mains. Plans deposit $20. Wiedeman & Singleton, P.O. Box 1878, Atlanta, Ga., engrs.

Mich., Coleman—Bids Asked—City, Water Bd., water sys., distr. mains, c.i. water mains various sections. Samuel Walker & Assoc., 124 S. Woodward St., Birmingham, Mich., engrs.

Tex., Houston—Bids Asked—Rosedale Courts, c/o Ben Schultz, 2821 Arbor Dr., water sys. $40,000. K. T. Edminster, 2100 Branard St., engr.

LOW BIDDERS

Miss., Newton—Town, Oct. 31, water well and treatment plant, from Layne-Central Co., Highway 80 W., Jackson, **$35,391**. CD 10/17.

Tex., Hearne—City, Oct. 30, WW Contr. 1, lines from Southwest Co., 514 Waggoner Bldg., Fort Worth, **$32,566**. CD 10/19.

CONTRACTS AWARDED

Tex., Dalhart—City, water lines, Purchase and Hire. **$36,500**. CD 7/20.

Tex, Garland—City, WW imprvs., lines, own forces. **$39,500**. H. B. Gieb & Assoc., Texas Bank Bldg., Dallas, engrs.

Tex., LaPorte—City, c.i. water lines, own forces. Approx. **$40,000**.

Tex., Mesquite—City, water lines, own forces. **$35,000**. Homer A. Hunter, 6403 Bob-O-Link St., Dallas, engr.

Tex., San Antonio—Wonder Homes Inc., 505 Majestic Bldg., water sys. Owner builds. **$40,000**.

Tex., Waller—City, water lines, Purchase and Hire. **$32,500**.

Que., Ancienne Lorette—Municipality, water main extens., own forces, **$85,000**. M. Gilbert, 232 St. Joseph St., Quebec City, engr.

SEWERS, WASTE DISPOSAL

BIDS ASKED

Calif., Los Angeles—B.A. 11/28—Bd. Supervs. Los Angeles Co., 501 Hall of Records. 5.26 mi. 6- to 15-in. sanitary sewers in Layton St., Altadena, C. I. 1255, $136,950. C. L. Arnold, co. engr. CD 3/3.

Ga., Eatonton—B.A. 11/30—City, 6,000 lin. ft. 8 and 12 in. vitr. clay sewer lines and 200,000 gpd treatment plant. Plans deposit $10. The Harwood Beebe Co., Montgomery Bldg., Spartanburg, S. C., engr. CD 4/21/49.

Tex., Corpus Christi—B.A. 11/30—City, City Hall, Sewage Disposal Plant 1, $300,000; Sewage Disposal Plant 2, $400,000. Freese, Nichols & Turner, 2111 Natl. Standard Bldg., Houston, archts. CD 2/23.

Tex., Kilgore—B.A. 12/5—City, approx. 73,000 lin. ft. 6- to 24-in. sanitary sewer mains, 200 manholes, $250,000; complete sewage treatment plant, $300,000. Plans deposit $50 each. A. P. Noyes, 200 N. Martin St. engr. CD 4/13.

LOW BIDDERS

Ariz., Phoenix—City, City Hall, sanitary sewer line, from Fisher Contg. Co., 2201 S. 19 Ave., **$69,893**, Est. $80,694. CD 10/24.

Calif., Los Angeles—Bd. Supervs., Los Angeles Co., 501 Hall of Records, Oct. 31, sanitary sewers in Rowland Ave., C. I. 1306, Temple City, from Matt J. Zaich Co., 628 Farmdale Ave., **$101,821**. Est. $129,400. CD 10/10.

Ga., Columbus—City, Nov. 1, gunite sewer work, from Pressure Concrete Co., Florence, Ala., **$55,350**. CD 11/22/49.

† **La., Camp Polk**—U. S. Eng., 606 Santa Fe Bldg., Galveston, Tex., Nov. 2, rehabilitation sewage disposal plant, Inv. 51-4, from Pierson & Chumley, P. O. Box 788, Beaumont, Tex., **$62,276**. CD 10/25.

N. J., Perth Amboy—City, sewer project in northwest sector of city adjacent to Columbus Park veterans homes, from Middlesex Concrete Products & Excavating Co., foot of Berry St., Woodbridge, **$171,885**. CD 10/25.

Tex., Centerville—City, Harris Campbell, mayor, Centerville, Nov. 2, sanitary sewerage sys. and sewage treatment plant, from The Southwest Co., W. T. Waggoner Bldg., Fort Worth, **$60,745**. Est. $65,000. CD 10/10.

Tex., Duncanville—City, Oct. 31, sanitary sewers, from E. L. Dalton & Co., Box 7125, Dallas, **$68,697**. Est. $50,000. CD 10/24.

Tex., Hallsville—City, c/o mayor, Hallsville, Nov. 6, sewer imprvs., extens., from Ray Mitchell, Tyler, **$78,274**. Est. $75,000. Allied Engineers, Inc., 1410 Fort Worth Natl. Bank Bldg., Fort Worth, engr.

Tex., Houston—City, City Hall, 900 Brazos St., cancelled bids to have been opened Nov. 1, storm sewers, Indiana St. **$96,000**. R. W. Lee, c/o owner, engr. CD 10/25.

▲ **Wash., Tacoma**—City, City Hall, Nov. 6, 27 mg. pd. primary treatment plant from Walsh Constr. Co., 785 Market St., San Francisco, Calif., **$1,555,085**. CD 10/6.

CONTRACTS AWARDED

Ga., Atlanta—Fulton Co., sanitary sewers in Alta, Charlotte, Emily, Jetsal, Louise and Mildred Places, Arlington Circle and Markone St., to Greene & O'Donnell Constr. Co., 2417 Piedmont Rd. N.E., **$58,289**. Bids 11/1. CD 10/12.

Ill., Round Lake—Village, Village Hall, sanitary sewers, to Kuch & Watson, 1112 W. Everett St., Waukegan, **$175,000**. Bids 7/14, awarded 10/24. CD 6/28.

Kan., Olathe—Mission Twp., c/o Johnson Co., lateral sewer, Dist. 190, to C. S. Foreman Co., 1221 Baltimore St., Kansas City, Mo., **$63,800**. Bids 10/23, Myron Nelson, 6915 Johnson Dr., RFD from Kansas City, Kan., co. engr. Black & Veatch, 4706 Broadway, Kansas City, Mo., consult. engrs.

Okla., Oklahoma City—City, City Hall, sanitary lateral sewers in Thomas Blvd. addn., to B & M Constr. Corp., Petroleum Bldg., Zone 2, **$57,618**. Est. $57,689. Awarded 10/31. H. E. Chase, city engr. CD 5/15.

Tex., Bangs—City, sanitary sewer collection sys., own forces. Approx. **$50,000**. Freese & Nichols, 407 Danciger Bldg., Fort Worth, engrs. CD 6/4/45.

Tex., Baytown—Texas Eastern Transmission Corp., P. O. Box 1612, Shreveport, La., sanitary sewer imprvs., expansion, exten., to A. L. Maddux & Assoc., Baytown, **$54,145**. Est. $50,000. Freese, Nichols & Turner, 2111 Natl. Standard Bldg., Houston, engrs.

Tex., Dalhart—City, sanitary sewer collection lines, Purchase and Hire. **$65,000**. CD 7/24.

Tex., Garland—City, sanitary sewer lines, own forces. **$70,000**. CD 9/27.

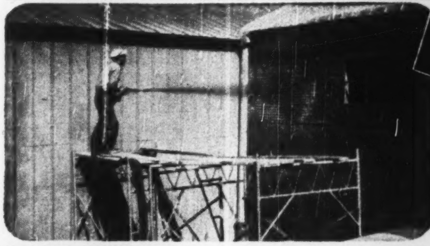
Tex., LaPorte—City, addnl. sanitary sewers, own forces. **$65,000**.

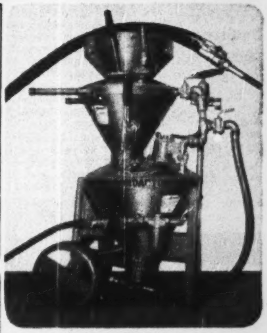
Tex., Mesquite—City, sanitary sewer mains, own forces. **$62,500**. Homer A. Hunter, 6403 Bob-O-Link Dr., Dallas, engr.

Tex., San Antonio—Wonder Homes, Inc., 505 Majestic Bldg., sanitary sewers. Owner builds. Approx. **$30,000**.

Tex., Seguin—City, City Hall, sewage disposal plant. Owner builds. **$55,000**. Helland & Seligmann, 302 Frost Bank Bldg., San Antonio, engrs.

Tex., Seguin—City, addnl. sanitary sewer lines, Purchase and Hire. **$61,000**. Helland & Seligmann, 302 Frost Bank Bldg., San Antonio, engrs.





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BRIDGES

BIDS ASKED

STATE HIGHWAY LETTINGS.

November 20
Connecticut
November 21
Indiana
November 28
Virginia
Wisconsin

November 29
Virginia
November 30
Florida
December 8
Pennsylvania

Iowa—B.A. 11/21—State Hy. Comn., Ames,

Adair Co.—180x20 ft. continuous I-beam bridge on local road in NE¼ Sec 27-76-30, SN-1576.

50x20 ft. I-beam bridge on local road between Sec. 21 and 28-77-33, SN-1577, both under $50,000 each.

Allamakee Co.—216x20 ft. multiple span I-beam bridge 45° skew on local road over Village Creek in Section 14-98-4, SN-1716, over $50,000.

Appanoose Co.—180x20 ft. continuous I-beam bridge on local road at the North Soap Creek crossing in Sec. 3-70-16, FM-228.

Audubon Co.—woven wire retard for present 120x20 ft. high truss with four 32x20 ft. I-beam approaches on U.S. 71 over East Nichnabotna River in Sec. 4-78-35, FN-52.

3 rein.-con. box culverts at various locations on local road from SE Corner Sec. 30-81-34 west 1.8 mi., SN-1458 D, all foregoing under $50,000 each.

Benton Co.—3 rein.-con. box culverts, and 150x20 ft. continuous I-beam bridge at various locations on local road out of Vinton southeasterly to NE Corner Sec. 27-85-10, SN-1232, Approx. $50,000.

Bremer Co.—40x20 ft. I-beam bridge on Iowa 188 between Sec. 22 and 27-93-13 F-975 (2).

Carroll Co.—10x48ftx4 ft., rein.-con. box and rein.-con. retaining wall at various locations on Iowa 285 from U.S. 30 north into Arcadia, F-904 (1), both under $50,000 each.

Cass Co.—40x20 ft. I-beam bridge also 210x20 ft. continuous I-beam bridge 30° skew on local road between Sec. 4 and 9-77 36 and in Sec. 12-77-36 S-97 (8), over $50,000.

Cedar Co.—40x24 ft. I-beam bridge on County Trunk Road H over local creek between Sec. 35 and 36-79-1, SN-1677.

Hamilton Co.—2 rein.-con. box culvert exten. at various locations on Iowa 383 from U.S. 69 east into Randall, F-966 (1).

Hancock Co.—3 rein.-con. box culverts at various locations on U.S. 18 from Garner east to Cerro Gordo Co. line, F-888 (1).

Henry Co.—50x20 ft. I-beam bridge on local road approx 400 ft. north of N¼ Cor. Sec. 32-71-5, SN-1874, all foregoing under $50,000 each.

Howard Co.—18 rein.-con. box culverts and extensions, 90x26 ft. continuous concrete slab bridge, 90x26 ft. continuous concrete slab bridge, 60x30 ft. I-beam bridge at various locations on Iowa 139 out of Protivin north, west and north into Cresco, F-928 (1), over $50,000.

Jackson Co.—150x20 ft. continuous I-beam bridge, 20° skew, on County Trunk Road F over Brush Creek in Sec. 23-85-3E, SN-135.

Jefferson Co.—120x20 ft. continuous I-beam bridge on local road over Troy Creek in Sec. 27-71-9, SN-1723.

Lee Co.—1 rein.-con. box culvert exten. 1 rein.-con. box culvert with rein.-con. flume and one 24 in. F-1 pipe, at various locations on U.S. 61 in Ft. Madison from East Ave., northeasterly 1.3 mi. U-540 (4).

Madison Co.—157½x16 ft. high truss with three 32x16 ft. I-beam approach spans on local road between Sec. 7 and 18-75-28, S-1490 (2).

Mahaska Co.—180x20 ft. continuous I-beam bridge on local road in NE¼ Sec. 33-76-14 SN-176, all foregoing under $50,000 each.

Marshall Co.—320x20 ft. continuous I-beam bridge on County Trunk Road V over Iowa River in SW¼ Sec. 27-85-19, SN-1222, over $50,000.

Pocahontas Co.—40x20 ft. I-beam bridge on local road over Lizard Creek between Sects. 22 and 23-90-32 SN-708.

Poweshiek Co.—2 rein.-con. box culverts on local road road between Sects. 27 and 28-81-16 S 894 (1).

1 rein.-con. box culvert exten., at various locations on local road from NW cor NE¼ NE¼ Sec. 6-81-13 south and east to S¼ Cor. Sec. 5-81-13, SN-1777.

4 rein.-con. box culverts and exten. at various locations on local road from junction U.S. 6 and Iowa 21 north to NW Cor. Sec. 24-81-13, SN-1788.

1 rein.-con. box culvert exten. on local road between Sec. 2 and 11-81-16, SN-1790.

Wapello Co.—4 rein.-con. box culverts and exten. at various locations on local road from SE Cor. CW¼ SW¼ Sec. 34-7.-14 northerly 2.41 miles, also from near N¼ Cor. Sec. 22-71-14 northeasterly 1.21 mi. SN-1363.

2 rein.-con. box culverts on local road in Sec. 28-71-15 and between Secs. 33 and 34-71-15 SN-1665.

Warren Co.—3F-1 pipes with rein.-con. flumes, 2 rein.-con. box culverts and 1 rein.-con. box culvert exten. at various locations on local road from Primary Road 207 at SW cor. Sec. 20-74-24 north to point 0.25 mi. north of S.W. corner Sec. 5-74-, SN-704.

Washington Co.—6 rein.-con. box culverts and exten. at various locations on Iowa 1 from east line Sec. 34-75-8 northeast to Iowa 92 at Washington, F-71 (5).

14 rein.-con. box culverts exten. at various locations on Iowa 1 from Brighton NE to east line Sec. 34-75-8, F 914 (1).

Wayne Co.—2 rein.-con.- box culverts and 1 rein.-con. box culvert exten. at various locations on local road from S¼ Cor. Sec. 14-69-20 north, east and north to E¼ Cor. Sec. 12-69-20, SB-1892.

Wright Co.—60x20 ft. I-beam bridge 45° skew on County Trunk Road U over West Otter Creek between Sec. 29 and 39-93.25, SN-1219, all foregoing under $50,000 each. **F. R. White, ch. engr.**

Ohio—B.A. 11/21—**State Hy. Dpt., T. J. Kauer, dir.,** Columbus, **Zone 15,**

Clark Co.—4 span, concrete Bridge 1644, County Road 351.

Hardin Co.—1 span, concrete structure and Bridge H31-25, County Road 31, at Mt. Victory. Plans deposit $2.75 each.

Alabama—B.A. 11/24—State Hy. Dpt., Montgomery,

Autauga Co.—steel, concrete bridge 0.045 mi. between Oak Grove and White City.

Coffee Co.—concrete, steel 0.078 mi. at Pea River west of Inn.

Dale Co.—steel, concrete bridge and conc. culvert 0.051 mi. between Skipperville and Barour Co. line.

Randolph Co.—steel, concrete bridge 0.023 mi. on Wadley-Level Rd.

Louisiana—B.A. 11/29—State Hy. Dpt. Baton Rouge,

East Baton Rouge and West Baton Rouge Parishes—cleaning, repainting bridge steel, Mississippi River Bridge, Baton Rouge, State Rte. C 1500, Proj. 7-10-08.

Louisiana—B.A. 12/13—State Hy. Dpt., Baton Rouge,

Caddo and Bossier Parishes—Red River Bridge (substructure) SP. 83-03-05, F. A. Secondary Proj. S 147 (1), and (superstructure) S. P. 83-03-07, F. A. Secondary Proj. S 147 (3), consisting three 75 ft. I-beam spans, one 75 ft. 11¾ in. I-beam span, five 360 ft. high steel fixed spans, one 75 ft. 11¾ in. I-beam span, and eleven 75 ft. I-beam spans, 0.572 mi. at Miller's Bluff on Plain Dealing-Hosston Hy., State Rte. 109. Plans deposit $6 and $3.50 respectively.

LOW BIDDERS

Colorado—State Hy. Dpt., **Denver, Nov. 2,** structures, stabilization and oil processed surf. 7.856 mi. State Hy. 12, beginning in Weston and exten. northwesterly, distance of 7.846 mi. Colo. Proj. S 0036 (1), Las Animas Co., from Carl V. Hill, Greeley, **$134,883.** CD 10/27, under Streets and Roads.

Iowa—State Hy. Comn., Ames, Oct. 24, Proj. SN-1594, Groups 1 and 2, Decatur Co., and SN-1912, Groups 1 and 2, Decatur Co., from Easton Constr. Co., Ames. **$50,924.** CD 10/11.

Kansas—State Hy. Comn., **Syracuse, Oct. 31,** Bridge 270-38-1.1, four 130 ft. 104 ft. cont. plate girder spans, Sta. 885 plus 00, 104 ft., Proj. 270-38 F 358 (14), Part I, Hamilton Co., from List & Clark Constr. Co., Railway Exchange Bldg., Kansas City, Mo., **$183,365.** CD 10/13 under Streets & Roads.

Missouri—State Hy. Comn., **Jefferson City, Nov. 3,** two 56 ft., two 68 ft. continuous I-beam spans, two 92 ft., one 115 ft. continuous plate girder spans, two 47 ft., one 56 ft. continuous I-beam spans, Rte. 71, road from N. W. of Plate City, southeast to Rte. 92, Sta. 52 plus 18 over Platte River, Proj. F 227 (3), and two 39 ft., two 50 ft. one 60 ft. continuous I-beam spans, Sta. 42 plus 00 over Platte River overflow, Rte. 71, road from N. W. of Platte City, southeast to Rte. 92, Proj. F 227 (3), both Plate Co., from Maxwell Bridge Co., Columbus, Kan., **$256,572** and **$109,160** respectively. CD 10/19.

▲ **New Jersey**—New Jersey Turnpike Auth., Trenton, Oct. 31, Contrs. 45, 45A and 45B, constr. substructures and superstructures of Oak Island Viaduct and Turnpike bridge over Delancy St., etc., Newark, Essex Co., from Underpinning & Foundation Co., 155 E. 44 St., **New York, N. Y., $1,841,596.** CD 10/13.

CONTRACTS AWARDED

La., New Orleans—City Purchasing Div., City Hall, vehicular bridge over Bayou St. John at Mirabeau Ave., Proposal 15,585, to Perrilliat-Rickey Constr. Co., Inc., 1530 S. Rendon St., **$60,385.** Bids 11/2.

Md., Baltimore—Baltimore & Ohio R.R. Co., A. C. Clarke, ch. engr., Charles and Baltimore Sts., rein.-con., steel Bridge 21 over Pulaski Hy. between Monument St. and Erdman Ave., to McLean Contg. Co., 1301 Fidelity Bldg. CD 10/12.

Neb., Omaha—City, City Hall, 18 and Farnam Sts., bridge over Ponca Creek, to Hollingworth Constr. Co., 668 S. 41 St., **$56,572.** E. W. Woodworth, city engr.

STREETS AND ROADS

BIDS ASKED

STATE HIGHWAY LETTINGS

November 21
Illinois
Indiana
Kansas
Massachusetts
Ohio
November 24
Alabama

November 28
Kansas
Virginia
Wisconsin
Novemoer 29
California
Louisiana
Virginia

December 8
Pennsylvania

N. Y., Brooklyn—B.A. 11/20—President Brooklyn Boro, Boro Hall, Zone 2, recurbing, reflagging, asph. paving, E. 13 St.; grading, curbing, flagging, asph. paving E. 87 St.; grading, curbing, flagging, b. conc. paving 21 and 22 Sts.; furnishing, erecting chain link fences east side of E. 2 St. CD 8/28/44.

Iowa—B.A. 11/21—State Hy. Comn., Ames,

Adams Co.—surf. 4.433 mi. county trunk road C from SW Cor, Sec. 34-72-33 north to NW Cor. Sec. 22-72-33, SN-114.

surf. 2.475 mi. local road from S.W. Cor. Sec. 15-71-32 north to U.S. 34, SN-892

surf. 2.995 mi. local road from S.W. Cor. Sec. 24-72-33 east to SE Cor. Sec. 19-72-32; also from SW Cor. Sec. 24-72-32 east to SE Cor. Sec. 24-72-32, SN-1319

1583 mi. local road from NE Cor. NW¼ NW¼ Sec. 25-73-34 northerly 1.583 mi., SN-1757A

surf. 2.164 mi. local road from N¼ Cor. Sec. 2-72-34 south 2.164 mi. SN 1757 B

Audubon Co.—grading 1.818 mi. local road from SE Cor. Sec. 39-81-24 west 1.8 mi., SN-1458D

Benton Co.—grading 2.081 mi. local road out of Vinton southeasterly to near NW Cor. Sec. 26-85-10, SN-1232

Carroll Co.—grading 0.801 mi. Iowa 285 from U.S. 30 north into Arcadia, F-904 (1)

Decatur Co.—surf. 4.521 mi. County Trunk Road C from SE Cor. NE¼ NE¼ Sec. 33-69-26 southeasterly and east to S.E. Cor. Sec. 31-69-25, SN-699

surf. 2.998 mi. local road from SW Cor. Sec. 17-40-24 east to SE Cor. Sec. 15-70-24, SN-1594

surf. 3.608 mi. local road from NW Cor. Sec. 7-702-7 east and north to W¼ Cor. Sec. 33-70-27, SN-1912

Floyd Co.—surf. 6.303 mi. County Trunk Road M from S.W. Cor. Sec. 12-94-18 north to Iowa 147, SN-1774

Hamilton Co.—grading 1.456 mi. Iowa 383 from U.S. 69 east into Randall, F-966.

Hancock Co.—grading 0.153 mi. U.S. 169 from new location of U.S. 18 south to overhead near Garner, 139, all foregoing under $50,000 each.

grading 6.485 mi. U.S. 18 from U.S. 69 near Garner easterly to county line, F-888 (1)

Howard Co.—grading 11.151 mi. Iowa 139 out of Protivin north, west and north into Cresco, F-928 (1), over $50,000 each.

Keokuk Co.—grading 1.187 mi. Iowa 108 out of Delta north to Iowa 92, F-961 (1).

Louisa Co.—temporary surf. 3.922 mi. Iowa 78 out of Morning Sun easterly to U.S. 61, F-352 (4).

Madison Co.—surf. 4.965 mi. local road from E¼ Cor. Sec. 30-74-27 northerly to near NW cor. NE¼ NE¼ Sec. 18-74-27; also on local road from SW Cor. Sec. 9-74-27 east, north and easterly to point in NE¼ Sec. 10-74-27, SN-1652

surf. 2.247 mi. local road from E¼ Cor. Sec. 12-75-26 southwesterly into St. Charles, SN-1827

Monroe and Wapello Counties—surf. 5.024 mi. local road from NW Cor. Sec. 39-73-17 south to U.S. 34, SN-947

Plymouth Co.—surf. 13.047 mi. County Trunk Road L from SW Cor. Sec. 3-90-46 east to SE Cor. Sec. 3-90-44, S-192 (3)

Poweshiek Co.—grading 3.993 mi. local road from SW Cor. Sec. 10-86-16 north to N.E. Cor. Sec. 28-81-16, S-894 (1)

grading 1.748 mi. local road from NW Cor. Sec. NE¼ NE¼ Sec. 6-81-13 south and east to S¼ Cor. Sec. 5-81-13, SN-1777

grading 6.361 mi. local road from junction U.S. 6 and Iowa 21 north to NW Cor. Sec. 24-24-81-13 also from SW Cor. Sec. 12-81-13 north to N.W. Cor. Sec. 24-81-13, SN-1788

grading 0.954 mi. local road from SE Cor. Sec. 1-81-16 north to NE Cor. Sec. 1-81-16 SN-1789

grading 1.001 mi. local road from SW Cor. Sec. 2-81-17 east to SE Cor. Sec. 2-81-16 SN-1790

Ringgold Co.—surf. 6.912 mi. local road from Mt. Ayr south SN-1669

Shelby Co.—surf. 3 mi. local road from SW Cor. Sec. 22-80-37 north to SW Cor. Sec. 3-80-37, SN-1311

surf. 5,737 cu. yd. local road from NW Cor. Sec. 36-78-40 east 2¼ mi. south ¾ miles thence east to U.S. 59 SN-1314

Wapello Co.—grading 3.597 mi. local road from S.W. Cor. Sec. 34-61-15 north and west to center Sec. 28-71-15; also from SE Cor. SW¼ SW¼ Sec. 35-71-15 north and east to Co. Trunk Road B in Sec. 36-71-15, SN-1665

Warren Co.—grading 3.201 mi. local road from Primary Road 207 at SW Cor. Sec. 20-74-24 north to a point 0.25 mi. north of SW Cor. Sec. 5-74-24, SN-704

Washington Co.—grading 3.845 mi. Iowa 1 from east line Sec. 34-75-8 northeasterly to Iowa 92 at Washington F-71 (5), all foregoing under $50,000 each

grading 6.479 mi. Iowa 1 from Brighton NE to east line Sec 37-75-8 F-914 (1), over $50,000

Wayne Co.—grading 3.137 mi. local road from N¼ Cor. Sec. 24-68-23 south to C.R.I. and P. R.R. Crossing in Clio, SN-1858

grading 2.728 mi. local road from S¼ Cor. Sec. 14-69-20 north east and north to E¼ Cor. Sec. 1-69-20, SN-1892, under $50,000 each. **F. R. White, ch. engr.**

Maryland—B.A. 11/21—State Rds. Comn., Baltimore, Zone 2.

Caroline Co.—bit. conc. leveling wedge, base and surf. course, relocation, macad. base, penetration macad. base, bit. conc. base, wid'n., resurf. 6.171 mi. section State Rte. 311, beginning at intersection State Rte. 287, 311 and 313 in Goldsboro, exten. northeasterly to Marydel, Contr. CO 223-215. Plans deposit $5, Wm. F. Childs Jr., 108 E. Lexington St., Baltimore, Zone 2, ch. engr.

Calif., Los Angeles—B.A. 11/22—City Bd. P. Wks., City Hall, imprvt. in Hesby St. and Noble Ave., Imprvt. District, $141,516. Lloyd Aldrich, city engr. CD 7/14.

New Jersey—B.A. 11/28—R. J. Abbott, comr. State Hy. Dpt., Trenton.

Cape May Co.—grading 1.922 mi. Route S49, Sect. 6, Wildwood Blvd. to Grassey Sound Bridge Approach, Middle and Lower Twps., Plans deposit $10.

Mercer Co.—constr. 1.183 mi. White Horse Ave. and S. Olden Ave. storm drain from S. Broad St. to Maple Shade School and from White Horse to Maddock Aves. Hamilton Twp., Fed. Aid Secondary Proj. Nos. S-170 (4) and S-130 (1). Plans deposit $10. CD 11/3, under LB.

Delaware—B.A. 11/29—State Hy. Dpt., Dover.

Sussex Co.—b. conc. divided hy. 4.914 mi. Jacob's School to One mile south of Greenwood, Contr. 1007, Fed. Aid Proj. F-SF-106 (7). Plans deposit $5. M. Allan Wilson, ch. engr.

N. Y., New York—B.A. 11/29—President Manhattan Boro, Municipal Bldg., Zone 7, elevated public highway with ramp approaches in South and Marginal Sts. from Coenties Slip to Jackson St.; fdns. in South and Marginal Sts. from Coenties Slip to Jackson St. Plans deposit $25.

† **Oklahoma**—B.A. 12/2—U. S. Eng., P. O. Box 61, Tulsa, Zone 1.

Mayes Co.—relocation, rebuilding 6.5 mi. U. S. 69 at Choteau with bridge rebuilding. $175,000.

LOW BIDDERS

California—State Div. Hys., Sacramento, Nov. 1, 2.8 mi. prepare, plant hy. roadside areas between 38 Ave. and Fallon St., Oakland, Alameda Co., from Justice Dunn Co., 1260 59 St., Oakland, **$89,080.** CD 10/9.

Calif., Los Angeles—Prudential Insurance Co., c/o Barnett, Hogen & Smith, engrs., 35 S. Raymond Ave., Pasadena, imprv. Coliseum St. from LaBrea to Santa Barbara Aves., from Charles T. Brown, 1955 6 St., San Fernando, **$94,393.** CD 10/25.

Calif., Ukiah—State Div. Architecture, P. Wks. Bldg., Sacramento, Oct. 31, road work at Mendocino State Hospital, from Nevada Constr. Co. Inc., Box 313, Reno, Nev., **$78,880.** CD 10/16.

† **Idaho**—Bureau of Public Roads, Dpt. Commerce, 609½ Bannock St., Boise, Oct. 27, grading, draining 1.261 mi. Ketchum-Clayton Hy., Idaho Forest Hy. Proj. 26R2-Unit 1, Custer Co., from Halvorson Constr. Co., Salem, Ore., **$57,647.** CD 10/18.

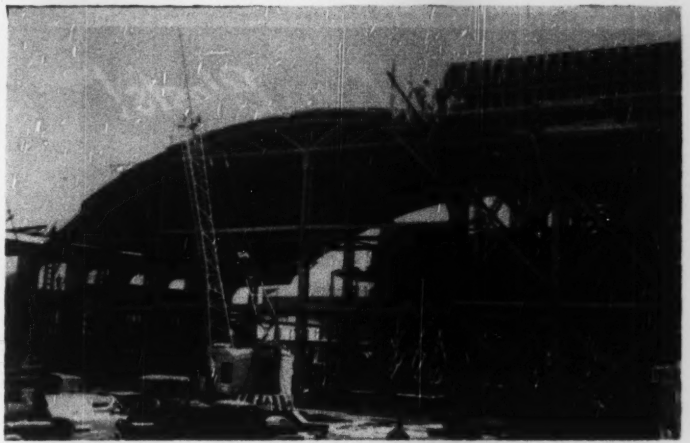
Louisiana—State Hy. Dpt., Baton Rouge, Nov. 2, shaping roadway, small drainage structures, timber bridges grav. base course, or alternate crushed stone base course, bit. surf. tr. (asph. cement), Vernon-Ruston Hy. and Fair Grounds Loop Rd., Proj. 68-02-04, 68-01-03 and 713-00-83, Jackson and Lincoln Parishes, from E. Pollard, Bossier City. **$154,498.** CD 10/12.

Louisiana—State Hy. Dpt., Baton Rouge, Nov. 2, grav. base course, or alternate soil cement base course, bit. surf. tr. (asph. cement) 7.825 mi. Mittie-Oberlin Hy., State Rte. 52, Proj. 28-05-12, Allen Parish, from T. W. Kleinpeter & Co., 146 S Leo St., Baton Rouge, **$155,357.** CD 10/26.

La., New Orleans—City, Proposal 15,598, surf., resurf. with asph. blacktopping roadways in downtown sect., Proposal 15,599, blacktopping Charlton Dr. from Paris Ave. to Pratt Dr. Proposal 15,590, asph. resurf. Monroe St. from Pritchard St. to Pontchartrain Blvd., from Texas Bitulithic Co., Burma Rd., **$193,643*****Proposal 15,600, temporary surf. Randolph St. from Owens Blvd. to Mandolin St., and Proposal 15,587, wid'n. resurf. Louisiana Ave. from Loyola to Claiborne Aves., from Boh Bros., Constr. Co., 2400 Cypress St., **$75,821*****Proposal 15,586, conc. and asph. paving Clara St. and Magnolia St. each from Napoleon Ave. to Cadiz St., Proposal 15,592, subsurf. drainage of Clara St. and Magnolia St., each form Napoleon Ave. to Cadiz St., Proposal 15,593, subsurf. drainage La Freniere St. from Paris to London Aves., Proposal 15,594, subsurf. drainage Molne St. from Filmore Ave. to Robert E. Lee Blvd., Proposal 15,595, subsurf. drainage on Rocheblave St. from Melpomene to Washington Ave. and Proposal 15,596, subsurf. drainage Spain St. from Mirabeau to Dreaux Aves., from R. P. Farnsworth & Co., Inc., 1515 S. Salcedo St., **$139,232*****Proposal 15,597, subsurf. and resurf. with asph. blacktopping roadways in Carrollton-Midtown Sect., Proposal 15,588, asph. resurf. Coleseum St. from Melpomene Ave. to Felicity St., Proposal 15,589, asph. resurf. La Salle St. from Louisiana to Napoleon Aves., and Proposal 15,591, asph. resurf. State St. Dr. from Claiborne Ave. to Fontaninebleau Dr., from Lang Co., 2500 Poydras St., **$195,080.**

▲ **Michigan**—State Hy. Comn., Lansing, Nov. 2, conc. b. conc. wearing course, 3.496 mi. Proj. CS 63-81 C1 (S 641 1), Oakland Co., from Cadillac Asphalt Paving Co., 12490 Evergreen St., Detroit, **$127,252** ***0.542 mi. dual c. conc. paved hy. utilities and service roads on M 112, Edsel Ford Expressway, Proj. UI 82-64 C 26 (UI 391 25), Wayne Co., from Charles J. Rogers, Inc., 14836 Grand River, Detroit, **$839,077** ***c. conc. 4.833 mi. M 59, Proj. F 50-28 C 2 (f 216 9), Macomb Co., from Loselle Constr. Co., Wyandotte, **$361,482.** CD 10/23.

Missouri—State Hy. Comn., Jefferson City, Nov. 3, 22 ft. c. conc. 2.281 mi. Rte. 71, road from N. W. of Platte City S. E. to Rte. 92, Proj. F 227—(3), Platte Co., from Maxwell Bridge Co., Columbus, Kan., **$303,354*****12 ft. c. conc. wid'n 4.381 mi., Rte. 66 T R, road from St. Charles Rock Rd. (Pottersville) S. to 40 T R, Proj. F 610 (2) Sect. A, St. Louis Co., and 12 ft. c. conc. 2.607 mi. Rte. 66 T R, road from St. Charles Rock Rd., Pottersville, south to 40 T R, Proj. F 610 (2) Sect. B., St. Louis Co., from Fred Weber Contg., Inc., Natural Bridge Rd., St. Louis, **$184,686** and **$117,831**, respectively. CD 10/19.



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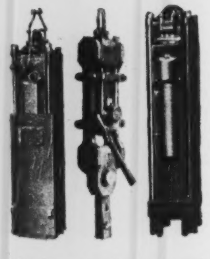

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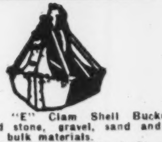

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▲ **New Jersey**—New Jersey Turnpike Auth., Trenton, Nov. 6, Contr. 60, constr. about 18 mi. four-lane b. conc. or c. conc. interchanges and incidental work with N. J. Turnpike, Sect. 2, between Woodbury Heights and Hartford, Gloucester, Camden and Burlington Counties, from Savin Constr. Co., 10 Village St., East Hartford, Conn., **$5,622,087**. CD 10/13.

New Jersey—State Hy. Dpt., Trenton, Nov. 2, paving 4.277 mi. Route 4, Sect. 44-A, Cape May Court House Relocation, Fed. Projs. F-8 (3) and F-24 (4), Middle Twps., from Ollie Hansen & Sons, Inc., Pleasentville, **$877,650**; constr. 0.749 mi. Route 25, Sect. 32-E, Newark Junction, Bridge and Off-Ramp to Circle from northbound thru roadway and slot from northbound local to northbound thru roadway Newark, Essex Co., from Franklin Contg. Co., 20 Washington Pl., Newark, **$283,707**. CD 10/19.

▲ **Ohio**—State Hy. Dpt., T. J. Kauer, dir., Columbus, Zone 15, rejected bids Oct. 24, Part 1, paving, construct 2 span, steel, concrete Bridge SE-23-123, U. S. R. 23, Part 2, paving, construct 1 span, steel, concrete Bridge SE-18-14; 2 span, steel, concrete Bridge SE-23-117; Part 3, c. conc. S. R. Nos. 12 and 18, U. S. R. 23 at Fostoria, est. **$2,186,200**., installing, drainage facilities, wid'n. resurf. S. R. 8, at Akron, Summit Co., est. **$261,550**. CD 10/18.

Tennessee—State Hy. Dpt., Nashville, cancelled bids to have been opened Aug. 25, wid'n., resurf. 20 mi. sect. State Hy. 1, from junction State Hy. 59 and exten. to junction State Hy. 15, Proj. No. SAP 909-B, Fayette and Shelby Counties. CD 8/9.

CONTRACTS AWARDED

Fla., Miami—City, street resurf. Proj. H-479, Item 1, to Troup Bros., Inc., 4151 S. Dixie Hy., **$69,165**; Item 2, to Asphalt Paving Co., 1000 N.W. 57 Ave., **$78,644**. CD 4/26/46.

Iowa—State Hy. Comn., Ames, surf. 21.4 mi. FM-284, Div. 1, 2, 3, and 4, Decatur Co., to Sargent Bros., Inc., 1850 E. Euclid Ave., Des Moines, **$55,223***** 4.976 mi. SN-788, 4.606 mi. SN-1695A, 3.012 mi. SN-1696; 2.5 mi. SN-2059 Fremont Co., to Jack Stanley, Thurman, **$51,658*****6.475 mi., FM-273A 7.5 mi. FM-273B; 3.5 mi. FM-273, 4.638 mi. FM-273D, 2.25 mi. FM-273E, 6.937 mi. FM-281A 2.5 mi. FM-281B4 mi. FM-281C 5.025 mi. FM-281D, 3.75 mi. FM-281E, Ringgold Co., to Grand River Limestone Co., Grand River, **$63,122**. Grand total $170,003. CD 10/11.

Kan., Kansas City—City, street and alley paving, to Union Constr. Co., 1401 Fairfax Trafficway, **$97,914**. Bids 10/24. J. O. Armstrong, Kansas City, city engr. CD 6/12/46.

▲ **New York**—Bureau Contracts & Accounts, Albany, construct 7.77 mi. Catskill Thruway (Kingston-Saugerties) with variable width c. conc. 3.18 mi. of intersecting roads, 5 bridge structures, and 0.15 mi. misc. work, Ulster Co., to Lane Constr. Corp., 37 Colony St., Meriden, Conn., **$3,659,497**. Bids 10/11. CD 10/17, under LB.

▲ **Ohio**—State Hy. Dpt., T. J. Kauer, dir., Columbus, Zone 15, grading, draining, paving, Type T-71, S. R. 16, Coshocton Co., to V. N. Holderman & Sons, 890 Oakland Park Ave., Columbus, **$547,911**, est. $712,600***grading, draining, wid'n. and resurf. Type T-35, U. S. R. 42, at Ashley, Delaware and Morrow Counties, to Union Asphalt Materials Co., R. D. No. 2, Ostrander, **$290,880**, est. $352,300***grading, draining, paving, wid'n. and resurf., construct 3 span, steel, concrete Bridge SH-47-105; 3 span, steel, concrete Bridge SH-47-115, S. R. 47, Shelby Co., to Hinton Constr. Co., N. Main St., Celina, **$438,822**, est. $477,500***grading, draining, pav-bit. road mix. SR. 644, and one span, steel, con-concrete Bridge SU-5-135, S. R. 5, Summit Co., to Wright Constr. Co., Williamston, Mich., **$1,419,834**, est. $1,470,000***grading, draining, paving, Type T-71, U. S. R. 23, Scioto Co., to Wm. L. Johnson Constr. Co., P. O. Box 218, Bexley Station, Columbus, **$583,987**, est. $645,600***waterbound macad. and bit. road mix. SR. 644, and one span, steel, concrete Bridge CO-644-48, Columbiana Co., to W. M. Brode Co., 1st. Natl. Bank Bldg., Newcomerstown, **$210,748**, est. $198,000***grading, draining, paving, Type T-71, U. S. R. 30N, U. S. R. 30, at Delphos, Allen and Van Wert Counties, to Rhotem Constr. Co., 16 E. Broad St., Columbus, **$276,926**, est. $306,070***grading, draining, paving, Type T-71, construct 3 span, concrete, steel, Bridge HA-50B-100, Part 1, and c. conc. Part 2, U. S. R. 50B, Hamilton Co., to D. R. Smalley & Sons, Inc., 426 W. Market St., Celina, **$680,454**, est. $776,900 ***grading, draining, paving, Type T-35, T-71 and 3 span, concrete, steel Bridge LA-7-30, S. R. 7, Lawrence Co., to H. W. Holt & Son, 998 W. Mound St., Columbus, **$925,847**, est. $913,000. Grand total $5,375,409. Bids 10/24. CD 10/18.

† **Oklahoma**—U. S. Eng., P. O. Box 61, Tulsa, Zone 1, bit. surf. access roads for recreation areas at Lake Texhoma, Bryan Co. Inv. CIVENG 34-066-50-159, to Wray Wible, Sherman, Tex., **$74,089**. Est. $78,000. Awarded 11/2.

▲ **Texas**—State Hy. Comn., Austin, grading, structures, pavement 0.475 mi. Hy. US 81, Proj. UI 1083 (11), Bexar Co., to Austin Bridge Co., P. O. Box 1590, Dallas, **$1,134,747**, road bed tr. c. conc. and M. K. T. R. R. and Old U. S. 77 underpass 2.578 mi. F-113 (11), Hill Co., to Austin Bridge Co., 1000 Singleton Blvd., Dallas, and Worth Constr. Co., P. O. Box 1590, Fort Worth, **$945,716**. Bids 10/17. CD 10/20, under LB.

Tex., Midland—Midland Co., Midland, road imprvs. in Southern Sect., force account. **$75,000**.

Tex., San Antonio—Wonder Homes, Inc., 505 Majestic Bldg., street constr., asph. type paving. Owner builds. **$55,000.**

Tex., Seguin—City, Seguin, street imprvs. and asph. paving, own forces. Approx. **$50,000.** Helland & Seligmann, 302 Forst Bank Bldg., San Antonio, engrs.

Tex., Temple—City, street resurf., Purchase and Hire, **$62,500.** CD 6/13/46.

EARTHWORK, WATERWAYS

BIDS ASKED

B. C., New Westminister—B.A. 11/29—Acting Secy Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., imprvs. North Arm Breakwater, Fraser River, $150,000. Plans deposit $50. R. Blais, c/o owner, engr. CD 10/4/49.

N. S., Coopers Point—B.A. 11/29—Acting Secy. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., breakwater, Approx. $33,000. Plans deposit $20. R. Blais, c/o owner, engr.

† **Mississippi**—B.A. 11/30—U. S. Eng., P.O. Box 60, Vicksburg, constr. Two Bayou Creek Channel imprv., CIVENG 22-052-51-67.

† **Florida**—B.A. 12/5—U. S. Eng., P. O. Box 4970, Jacksonville, modifying levee cross section and paving lakeside slope and crown of section of Lake Okeechobee Levee in Levee Div. 2, Central and Southern Florida, Flood Control Proj., Inv. No. CIVENG 08-213-51-7. CD 10/19, under LB

† **Washington**—B.A. 12/5—Bureau Reclamation, Dpt. Interior, Ephrata, constr. West canal main drains, drain W645, Station 80 plus 00 to 565 plus 00, Columbia Basin Proj., Spec. R1-CB-82 (Region 1). L. N. McClellan, Bldg. 1-A, Denver Federal Center, Denver, Colo., ch. engr.

† **Washington**—B.A. 12/7—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, sluice gates, hoists and gate frames for Chief Joseph Dam, Brewster. Serial No. CIVENG -51-24. CD 9/12/44.

LOW BIDDERS

† **Colorado**—U. S. Eng., P. O. Box 1538, Albuquerque, N. M., cancelled bids to have been opened Nov. 17, channel clearing and straightening Arkansas River mouth of Eightmile Creek near Florence, CIVENG 29-005-51-7. CD 11/2.

† **Mississippi**—U. S. Eng., P. O. Box 60, Vicksburg, Nov. 2, approx. 77,700 cu. yd. earthwork on 457 stations of levee and dike on east bank of Mississippi River, Inv. 51-50, Bolivar Parish, from Forcum-James Co., Dyersburg, Tenn., **$52,331.** CD 10/18.

† **Montana**—Bureau Reclamation, Bldg. 1 A, Denver Federal Center, Denver, Colo., Oct. 26, three 12.78 ft. by 21.78 ft. fixed wheel gates for penstocks at Canyon Ferry Dam, Missouri River Basin Proj., Spec. 3188, from Treadwell Constr. Co., Midland, Pa., **$94,380** f.o.b. Midland, Pa. CD 10/18.

† **Nebraska**—U. S. Eng., 1709 Jackson St., Omaha, flood control work, near Omaha, Inv. 35, from Pine Bluff Sand & Gravel Co., Ft. Neb., Pine Bluff, Ark., **$292,627.**

CONTRACTS AWARDED

† **Kentucky**—U. S. Eng., P.O. Box 97, Memphis, 1, Tenn., imprv. concrete floodwall, earthen levee and appurtenant structures, Hickman Co., CIVENG 40-041-51-33, to McDade & McDade, Fulton, **$248,356.** Bids 10/18. CD 9/22.

Minn., Breckenridge—Wilkin Co., E. Anderson, aud., County Ditch 37, clearing, excav., installing concrete culverts, etc., to Barnard-Curtiss Co., 808 Phoenix Bldg., Minneapolis, **$30,154.** Bids 10/27. CD 10/12.

Tex., Hearne—City, drainage, open and closed, own forces. **$66,000.** Garrett Eng. Co., 5008 Almeda Rd., Houston, engr.

N. S., Lunenburg and Feltzen South—Dept. P. Wks., Hunter Bldg., Ottawa, Ont., dredging, to J. P. Porter Co. Ltd., 1010 St. Catherine St. W., Montreal, Que., Approx. **$69,927.** R. Blais, c/o owner, engr.

AIRPORTS

BIDS ASKED

† **Miss., Biloxi**—ELECTRICAL AND DISTRIBUTION SYSTEM—B.A. 11/27—Purchasing & Contracting Office, Keesler Air Force Base, renovation electrical dist. sys. At Keesler Field, Inv. 51-19. Extended date. CD 10/27.

† **Fla., Key West**—FINGER PIERS—B.A. 11/29—Dpt. Navy, Charleston Naval Base, Charleston, S. C., rehabilitating, exten. finger piers at Naval Air Station Boat House, Fleming Key, NOY 22777. Spec. 25303. Plans deposit $5.

† **Alaska, Eielson Air Force Base**—HEATING, POWER PLANT—B.A. 11/29—U. S. Eng., (APO 942, c/o PM, Seattle, Wash.) Anchorage, central heating and steam power plant, Inv. No. S95-507-51-22. Plans deposit $100. Extended date. CD 10/17.

† **Colo., Denver**—DOCKS, etc.—B.A. About 12/5—U. S. Eng., 1709 Jackson St., Omaha, Neb., 6 aircraft maintenance docks and 2 story 51x90 ft academic bldg., Lowry Air Force Base, Spec. No. ENG 25-066-51-25.

† **Ga., Glynco**—UNDERGROUND CABLES—B.A. 12/5—Dpt. Navy, Charleston Naval Base, Charleston, S. C., underground cables at Naval Air Facility, NOY 23456. Spec. 25823. Plans deposit $10.

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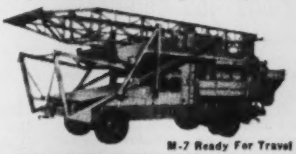
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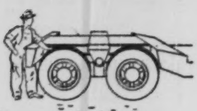

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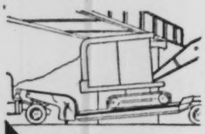

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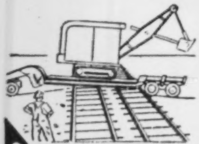

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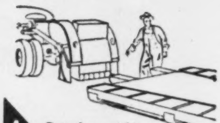

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LOW BIDDERS

Ala., Tuscaloosa,—RUNWAY PAVING—City, Airport, runway paving, from W. W. Tonwsend, Tuscaloosa, **$119,294.**

▲† **Okla., Oklahoma City**—FIELD IMPRVS.—U. S. Eng., P.O. Box 61, Tulsa, imprv. Tinker Field, Job 7, from E. B. Bush Constr. Co., 3500 W. Reno St., Zone 4, **$1,624,000.**

CONTRACTS AWARDED

† **Alaska**—OUTSIDE UTILITIES—U. S. Eng. (APO 942. c/o PM, Seattle, Wash) Anchorage, outside utilities for A.A.C.S. facilities, Elmendorf Air Force Base, Inv. No. S95-507-51-23 to Wiggins Constr. Co., Anchorage, **$460,863.** Est. $599,415. Bids 11/2.

Que., Seven Islands—TOWER, etc.—Dpt. Transport, Ottawa, Ont., one Rawinsonde Tower and office bldg. on Hydrogen Generator Bldg. and 4 staff dwellings at Airport, to Lucien Tremblay, Chateau Chaplain, Quebec City, Approx. **$75,000.** CD 5/31.

PUBLIC BUILDINGS

BIDS ASKED

Pa., Indiana—DORMITORY—B.A. 11/21—General State Auth., 18 and Herr Sts., Harrisburg, general contract; heating; plumbing; electrical work for construction men's dormitory at Indiana State Teachers College. $700,000. Plans deposit $15 each. Bowers & Barbalat, Bakewell Bldg., Pittsburgh, Zone 19, archts. A. F. Jones, c/o owner, ch. engr. CD 10/2, under LB.

Pa., West View (Br. Pittsburgh)—SCHOOL—B.A. 11/21—Joint School Dist. of North Allegheny, West View, 1 story bsmnt., brick, block school, McCandless Twp. $250,000. Charles M. & Edward Stotz, Bessemer Bldg., Pittsburgh, archts.

N. Y., Hawthorne—SCHOOL—B.A. 11/22—Bd. Educ., Union Free School Dist. 7, Hawthorne, school addn., Memorial Dr. CD 10/18.

Conn., New Britain—HALL—B.A. 11/27—State, R. S. Thatcher, comptroller, brick, steel Henry Barnard Hall, arts and science bldg., B/A-R-64, $900,000. Hollis W. Kincaid, 171 Washington St., Hartford, archt. Robert W. Loomis, 32 Maple St., Windsor, engr. CD 10/27, under LB.

† **Arkansas**—STRUCTURES—B.A. 11/28—U. S. Eng., 300 Broadway, Little Rock, steel switchyard structures at Bull Shoals Powerhouse, Cotter, CIVENG-03-050-51-25.

N. Y., New York—HOUSING—B.A. 11/28—New York City Housing Auth., 63 Park Row, Zone 7, foundations and appurtenances for Edenwald Houses (Proj. No. NY 5-19) in area bounded by Laconia Ave., Grenada Pl., E. 233 St., Baychester Ave., Schieffelin Ave. and E 225 St., Bronx Boro. Plans deposit $75. CD 3/18/48.

N. C., Tarboro—HOSPITAL—B.A. 11/28—Edgecombe General Hospital, Inc., Tarboro, hospital. Marion A. Ham, Durham, archt.

Tenn., Pulaski—SCHOOL—B.A. 11/28—M. T. Newman, Jr., Supt. Schools, Court House, Pulaski Elementary School, for Giles County Bd. Educ. Plans deposit $300. Howard, Hickerson & Jordon, Inc., 304½ Third Ave., North Nashville, engr. and archt. CD 10/23.

Tex., Pittsburg—HOUSING—B.A. 11/28—Pittsburg Housing Auth., Pittsburg, 15 one story masonry type, low rental Negro Housing Units; 15 one story masonry, low rental housing units for Whites. $458,227. Plans deposit $50. Christensen & Christensen, 709 N. St. Paul St., Dallas, archts. CD 10/4.

Wis., Oconomowoc—SCHOOL—B.A. 11/28—Bd. Educ., high school addn. $365,000. Plans deposit $10. Ebling, Plunkett & Keymar, 1220 N. Milwaukee St., Milwaukee, Zone 2, archts.

Fla., Miami—SCHOOL—B.A. 11/29—Dade Co. B. P. Instruction, 275 N. W. 2 St., Bethune Colored School, $300,000. Bid date changed. Lloyd F. Vann, 1674 Coral Way, archt. CD 10/13.

▲ **Ky., Louisville**—HOUSING—B.A. 11/29—Municipal Housing Comn., Second and York Sts., Zone 2, federal housing (Negro) K 16, Young Ave. $6,500,000. Plans deposit $50, Fred Hartstein, McDowells Bldg., O. P. Ward, Washington Bldg., Louis & Henry, Starks Bldg., archts. E. R. Ronald & Assoc., 554 S 3 St., Zone 2, engrs. CD 7/14.

N. C., Concord—HOUSING—B.A. 11/29—Housing Auth. Concord City, Snider Bldg., Concord, 17 buildings, 46 dwelling units, Proj. N. C. 8-1. Plans deposit $35. A. G. Odell, Jr. & Assoc., 109 W. 3 St., Charlotte, archts.

Pa, Millersville—DORMITORY, etc.—B.A. 11/29—General State Auth., 18 and Herr Sts., Harrisburg, general contract; heating; plumbing; electrical work for women's dormitory, dining hall at Millersville State Teachers' College. $700,000. Plans deposit $10. Henry Y. Shaub, 20½ N. Queens St., Lancaster, archt. A. F. Jones, c/o owner, ch. engr. CD 12/20/49.

S. C., Columbia—LIBRARY—B.A. 11/29—Richland Co., Columbia, library. $350,000. Plans deposit $25. Lafaye, Lafaye & Fair, 1226 Sumter St., archts. CD 2/1/45.

Tenn., Chattanooga—HOUSING—B.A. 11/29—Chattanooga Housing Auth., c/o Selmon T. Franklin, archt., 421 Poplar St., 400 housing units for Whites. Extended date. CD 10/19.

Calif., Glendale—SCHOOL—B.A. 11/30—Glendale Unified School Dist., 411 E. Wilson St., reinforced brick Thomas A. Edison School, $250,000. Merrill W. Baird, Bank of America Bldg., archt. CD 5/12.

▲ **Ga., Americus**—HOUSING—B.A. 11/30—Americus Housing Auth., c/o Abreu & Robeson, archts., 22

Marietta St. Bldg., Atlanta, housing units, Approx. $1,000,000. Plans deposit $50. Extended date. CD 9/12.

Minn., Minneapolis—POWER PLANT—B.A. 11/30—University of Minnesota, R. S. Callaway, purch. agt., 323 Admin. Bldg., Main Campus bldg. alterations, electric light, power wiring, steam and water piping, etc. at Minneapolis Campus Heating Plant, $100,000. Plans deposit $25. Helmick, Edeskuty & Lutz, 405 Essex Bldg., archts.

Minn., Winona—SCHOOL—B.A. i11/30—Bd. Educ., O. C. Glover, clk., 2 story, 60x31 ft and 60x119 ft., L-shaped school, Huff and Sarnia Sts., $300,000. Plans deposit $50. Boyum, Schubert & Sorenson, 300 Exchange Bldg., archts

N C., Wilmington—HOUSING—B.A 11/30—Wilmington Housing Auth., Wilmington, 250 units 30 buildings, 2 story, Robert S. Jervay Place, N. C. 13. Plans deposit $50. Leslie N. Boney, Murchison Bldg., archt. CD 11/1.

† **N. M., Las Cruces**—THEATER—B.A. 11/30—U. S. Eng., 2132 E. Central Ave., Albuquerque, 518-seat theater White Sands Proving Ground (White Sands P. G. AMP-51-1), Serial No. 29-005 (AMP)-51-1. CD 10/24.

N. J., Trenton—SCHOOL—B.A. 11/30—Bd. Educ., 9 S. Stockton St., Joseph Stokes Memorial School, Parkside and Homan Aves. $650,000. Louis Kaplan, 25 N. Montgomery St., and Micklewright & Mountford, 72 Ewing St., archts. CD 1/13.

Ill., Mahomet—SCHOOL—B.A. 12/1—Bd. Educ., Mahomet, brick, concrete school. Berger, Kelley & Assocs., Lincoln Bldg., Champaign, archts.

N. C., Goldsboro—HOUSING—B.A. 12/1—Goldsboro Housing Auth., Dr. David J. Rose, chn., Court Room, City Hall, housing, 138 units for Whites, N. C. 15-1; 137 units for Negroes, N. C. 15-2. Plans deposit $50. Edwards, Pugh & McKimmon, 743 W. Johnson St., Raleigh, archts. CD 4/26.

Ia., Glenwood—SCHOOL—B.A. 12/5—State Bd. Control, Des Moines, school at State Hospital, $750,000. Ralph Arnold, State Bldg., state archt. Wm. Beuttlet, Insurance Exchange Bldg., Sioux City, assoc. archt. CD 8/12/49.

▲ **Tex., Austin**—POLICE HEADQUARTERS—B.A. 12/5—State of Texas, Public Safety Comn., c/o Allen Shivers, gov. Capitol Bldg., state police headquarters. $1,300,000. Plans deposit $25. Giesecke, Kuehne & Brooks, 121 E. 8 St., archts. CD 10/28/49.

Tenn., Union City—HIGH SCHOOL—B.A. 12/5—Union County Bd. Educ., Court House, 1 story, brick, block back up, steel frame high school bldg., concrete fdn. $450,000. Raymond Spencer & Assoc., 1st Natl. Bank Bldg., Memphis, archt. CD 9/5.

Mass., Boston—SCHOOL—B.A. 12/6—City, Dpt. School Bldgs., 26 Norman St., brick, steel Michael J. Perkins School addn., John A. Andrews Dist., South Boston. $250,000. Plans deposit $100. Thomas F. McDonough, 25 Huntington St., archt. CD 11/2.

N. C., Charlotte—HOUSING—B.A. 12/6—Charlotte Housing Auth., Edwin L. Jones, chn. 831 Seigle Ave., 400 dwelling units and community bldg. Plans deposit $50. Louis H. Asbury & Son, and Walter Hook & Assoc., 502 Chatham Bldg., archts.

▲ **Man., Camp Shilo**—BARRACK BLOCK—B.A. 12/6—J. D. McCarthy, secy. Canadian Commercial Corp., 70 Lyon St., Ottawa, Ont., two barrack blocks, two 500-man messes Nos. 1 and 2, Tender No. G23-S-15-59, $1,150,000. Plans deposit $100. CD 7/19.

N. C., Raleigh—CIVIL and ELECTRICAL ENGINEERING—B.A. 12/7—North Carolina State College Agriculture & Engineering at University of North Carolina, Raleigh, civil and electrical engineering bldg. addns. Approx. $300,000. Plans deposit $25. Northrup & O'Brien, 602 Reynolds Bldg., Winston-Salem, Zone 3, archts. CD 6/29.

† **Tenn., Oak Ridge**—PORTAL—B.A. 12/11—U. S. Atomic Energy Comn., P. O. Box E, Attention: R. J. Dunbar, Engineering Div., Oak Ridge, construct Portal Bldg. 9, Inv. No. 401-51-4 A. Plans deposit $10.

S. C., Columbia—OFFICE—B.A. 12/12—State Hy. Dpt., Calhoun Office Bldg., Columbia, 5 story, bsmnt., steel, concrete, stone or brick, air-conditioned office. Hopkins, Baker & Gill, Florence, archts. CD 10/20.

▲ **Wash., Seattle**—SCHOOL—B.A. 12/12—School Dist. 1, 815 4 Ave. N. 2 story, 78x134 ft., 133x167 ft., 98x155 ft., 64x271 ft., 43x 164 ft., and 73x77 ft., 74x283 ft., 93x162 ft. and 90x207 ft. rein.-con., structural steel bldgs. for David T. Denny Junior High School in southwest part of city, $1,700,000. Mallis, De Hart & Hopkins, Lyon Bldg., Seattle, Zone 4, archts. CD 4/7.

† **Alaska, Fort Richardson**—FAMILY QUARTERS, etc.—B.A. 12/12—U. S. Eng. (APO 942, c/o PM, Seattle, Wash.) Anchorage, construct thirty-five 8-family quarters, Inv. No. S95-507-51-31; three 20-man bachelor officers quarters, Inv. No. S95-507-51-32. Plans deposit $25 each.

Ariz., Phoenix—LIBRARY—B.A. 12/14—City City Hall, public library part of civic center proj. $977,500.

† **Ill., Chicago**—OFFICE, etc.—B.A. 1/16—Veterans Admin., Munitions Bldg., Zone 25, Wash. 25, D. C., 3,696,000 cu. ft., rein.-con., brick, stone Regional Office and Clinic Bldg. 11 for West Side. CD 10/18.

Ga., Gainesville—HOUSING—B.A. 1/24—Gainesville Housing Auth., Gainesville, 100-unit housing. Plans deposit $50. Wm. J. J. Chase & Assocs., 140 Peachtree St., Atlanta, archts. CD 9/22.

LOW BIDDERS

Calif., Pasadena—TRADES and TECHNOLOGY—Pasadena City School Dist., 351 S. Hudson St., 25,000 sq. ft., rein.-con. trades and technology bldg. at Pasadena Junior College, from Hermann Co., 417 S. Hill St., Los Angeles, **$330,690**. CD 9/12/49.

▲ **Ga., Brunswick**—HOUSING—Brunswick Housing Auth., Brunswick, Oct. 31, Housing Project GA 9-3, from S.S. Jacobs Co., Hildebrandt Bldg., Jacksonville, Fla., **$1,060,000**; Housing Project GA-94- from Delta Constr. Co., Brunswick, **$1,000,549**. CD 10/29.

Kan., Lawrence—DORMITORIES—State Bd. Regents, Topeka, Oct. 19, general contract 3 dormitories at University of Kansas, from Martin K. Eby Constr. Co., 1905 Walker St., Wichita, **$374,963**. CD 3/9.

Mass., Orange—SCHOOL—Town, Town Clerk's Office, Town Hall, Nov. 2, school, Millers Ave. off Dexter St., from William Belbin, 1333 Main St., Athol, **$291,980**. CD 10/19.

Mass., Saugus—SCHOOL—Town, School Dpt., 203 Winter St., Nov. 1, school, Hurd Ave. and Central St., from G. L. Rugo & Sons, Inc., 80 Boylston St., Boston, base bid **$423,000**, with alterations **$439,589**. CD 10/23.

Minn., Rochester—SLAUGHTER HOUSE—State, Dpt. Admin., State Capitol, St. Paul, rejected bids Oct. 5, slaughter house at State Hospital, L. B. **$86,800**. CD 10/18.

N. C., Wilson—RESIDENCES, etc.—North Carolina Sanatorium, Dr. H. F. Easom, Medical Dir., Wilson, projects abandoned, South Wing and 5 residences for Medical staff. CD 10/20, under LB.

Pa., Cresson—MEDICAL SERVICE UNIT—General State Auth., 18 and Herr Sts., Harrisburg, rejected bids Sept. 6, medical service unit at Tuberculosis Sanatorium 2, L.B. **$312,500**. Will re-advertise. CD 9/11, under LB.

Ont., Rockland—SCHOOL—Separate School Bd., Rockland, Oct. 16, 14-classroom school, from Eugene D' Aoust, LeRoi St., Emburn. Approx. **$275,000**. CD 10/4.

CONTRACTS AWARDED

Fla., Miami — SCHOOL — Dade Co. Bd. P. Instruction, 275 N.W. 2 St., Kensington Park School, to Joseph G. Moretti, Inc., 2401 N.W. 7 St., **$252,324**. Bids 11/1. CD 10/13.

Fla., Jacksonville—TRANSFORMERS, etc.—City, City Hall, transformers, controls at sub-stations at Venetia, Lake Shore and West Beaver Sts. for new electric plant, to Westinghouse Electric Co., Union Bank Bldg., Pittsburgh, Pa., **$110,401**. Bids 10/17, awarded 11/2. CD 10/18.

Fla., New Smyrna—POWER PLANT—City, power plant, with 2 generators switchgear complete, to National Supply Co., P. O. Box 540, Springfield, O., **$211,000**. Reynolds, Smith & Hills, 227 Park St., Jacksonville, engrs.

Ill., Kankakee—SCHOOL—Bd. Educ., Dist 111, 240 Warren Ave., 2 story, brick, stone Franklin School, to Hanson & Peterson Co., 296 S. Des Plaines St., Joliet, **$300,000**. Bids 10/17, awarded 10/23. CD 10/5.

Ill., Warrenville—SCHOOL—B. D. Educ. Dist. 31, Warrenville, 2 story, bsmnt., 50,000 sq. ft. school addn., to R. F. Dressler, 213 Wesley Ave., Wheaton, **$290,000**. Awarded 10/27. CD 6/22.

Ky., Louisville—SCHOOL—Jefferson Co. Bd. Educ., W. Jefferson St., Hikes School addn., Buechel, to J. D. Jennings Corp., E. Barbee St., **$270,682**. Bids 9/29, awarded 10/10. CD 9/21.

Md., Oakland—SCHOOLS—Bd. Educ., Garrett Co., 2 story, brick, concrete, steel Oakland Junior Senior High School, Oakland, to John I. Vandergrift Co., Cumberland, and North Region Junior Senior High School in The Cove, to Lynch, Pugh & Corson, Morgantown, W. Va. Approx. **$300,000** each. CD 10/5.

Mich., Adrian—SCHOOL—City, Bd. Educ., 1 story, brick, concrete block school, Treat Rd., Madison School Dist., to Krieghoff Constr. Co., Adrian, **$300,000**. Bids 10/19. CD 10/6.

Minn., Moorhead—SCHOOL—Bd. Educ., C. Stever, clk., general contract 90x160 ft. school, to Kileen & Wille Constr. Co., 1402 Poplar Ave., Superior, Wis., **$260,582**. Bids 10/31. CD 10/25.

† **S. C., Fort Jackson**—MISC. STRUCTURES—U. S. Eng., P. O. Box 889, Savannah, Ga., misc. structures, to Dickerson, Inc., Box 448, Monroe, N. C., **$58,951**. Bids 10/26.

Va., Blacksburg—ENGINEERING LABORATORY—State of Virginia, Richmond, engineering laboratory at Virginia Polytechnic Institute, to J. M. Turner, 137 Campbell Ave. S.W., Roanoke, **$866,000**. Bids 11/2. CD 11/9, under LB.

Ont. Orillia—MATERNITY WING—Soldiers Memorial Hospital, Orillia, 2 story, bsmnt., L-shaped, 40x130 ft., brick, tile maternity wing to hospital, to George Hardy Ltd., 163 Wicksteed Ave., Leaside, Approx. **$251,900**. Bids 9/6. CD 8/31.

Que., St. Hubert—HOUSING—Canadian Commercial Corp., 70 Lyon St., Ottawa, Ont., 180 man barrack block at R.C.A.F. Station, to Fortins & Lamothe Co. Ltd., 282 St. Marcel St., Ville St. Joseph, Drummondville, Approx. **$370,000**. CD 11/1, under LB.

Que., Valleyfield—GARAGE—Province of Quebec, Dpt. Roads, Quebec City, concrete, brick garage, to A. Marcil, Valleyfield, **$100,000**.

COMMERCIAL BUILDINGS

BIDS ASKED

Pa., St. Marys—OFFICE—B.A. 11/22—Stackpole Carbon Co., St. Marys, 2 story, 78 x 97 ft. brick, stone block, office bldg. $250,000. Beck & Tinkham, Bailey Bldg., Jamestown, N. Y., archts.

▲ **Mass., New Bedford**—HOSPITAL—B.A. 11/30—St. Luke's Hospital, 101 Page St., 4 story, bsmnt., brick, steel, concrete hospital addn., alterations, 1 story top addn. existing bldg. $1,500,000. Plans deposit $25. Curtin & Riley, 45 Newbury St., Boston, archts. CD 10/20.

Mont., Kalispell—BANK and OFFICE—B.A. 12/1—Conrad National Bank, Kalispell, bank and office addn. $250,000. Fred Brinkman & Percy Lenon, Kalispell, archts.

Ill., Chicago—SCHOOL—Bids Asked—Ephphetas School for Deaf, Pulaski Rd. and Belmont St., Zone 41, 2 story, bsmnt., rein.-con., limestone school. $400,000. Wm. J. Ryan, 5 E. Wacker Dr., Chicago, Zone 1, archt. Former Contract rescinded CD 10/2, under CA.

SOON LETS CONTRACT

Ill., Chicago—ORTHOGENIC INSTITUTE—University of Chicago, Campus, Zone 37, soon lets contract 2 story, bsmnt., rein.-con. brick orthogenic institute, 1365 E. 60 St., Zone 37, $400,000. Shaw Metz & Dolio, 208 S. La Salle St., Zone 4, archts.

Okla., Enid—OFFICE—Champlin Refining Co., Enid, soon lets contract 150x180 ft. office bldg. and garage. $325,000. Plans deposit $25. Dow Gummerson, Bass Bldg., archt. CD 4/21.

Wash., Longview—LODGE—Elks Lodge No. 1514, Longview, soon lets contract 2 story, part bsmnt., 90x151 ft., rein.-con. lodge with $250,000. L. B. Rice, Myklebust Bldg., archt. CD 10/19.

Ont., Toronto—GROCETERIA—Loblaw Groceterias Co., Ltd., Fleet and Bathurst Sts., soon lets contract 1 story, 120x167 ft. rein.-con., structural steel groceteria, Yonge St. and Finch Ave. Approx. $300,000. K. W. Bush, c/o owner, engr.

LOW BIDDERS

Fla., Surfside—APARTMENT DEVELOPMENT—Surf Harbor Inc., c/o low bidder, apartment development, from Allied Constr. Co., 304 Lincoln Rd., Miami Beach, **$300,000**.

Mass., Longmeadow—OFFICE—New England Telegraph & Telephone Co., 185 Franklin St., Boston, Oct. 31, central office bldg., 450 Longmeadow St., from J. G. Roy & Sons Co., 21 Silver St., Springfield, **$300,000**. CD 10/25.

Pa., McKeesport—HOSPITAL—McKeesport Hospital, 1500 5 Ave., Nov. 1, 9½ story, 48 x 185 ft., brick on tile, steel hospital addn., from Siesel Constr. Co., 3528 Forbes St., Pittsburgh, **$817,000**. CD 10/18.

CONTRACTS AWARDED

Ala., Cullman—LIBRARY—St. Bernard College, Cullman, library, to I. F. Harrison, c/o owner, **$400,000**.

Calif., LaJolla—ART CENTER—La Jolla Art Center, La Jolla, 3 story, rein.-con. art center, to F. E. Young Constr. Co., 2141 Main St., San Diego, **$300,000**. Robert Mosier & Roy Drew, 1262½ Prospect St., archts.

▲ **Conn., Hartford**—HOSPITAL—St. Francis Hospital Corp., 114 Woodland St., kitchen and X-ray addns., alterations, to Standard Bldg. Constr. Co., 64 Airport Rd., **$1,888,989**. CD 11/30/44.

D. C., Wash.—DORMITORY—Franciscan Friars of the Atonement Inc., Atonement Seminary, Harewood Rd. N. E., one 3 story masonry, concrete dormitory, 145 Taylor St. N. E., to Tuckman-Barbee Constr. Co. Inc., 1720 H St. N. W., **$380,000**. Murphy & Locroft, 1518 P St. N. W., archts. Awarded 11/3.

Ky., Louisville—RESIDENCES—Theodore Vogelsburg, 1735 Schuff Lane, thirty-five residences. Owner builds, **$315,000**.

Md., Baltimore—SCHOOL and CONVENT—Holy Rosary R. C. Church, 408 S. Chester St., 4 story, 186 x 392 ft., brick, concrete, steel, L shape school, and 3 story, bsmnt., 73 x 113 ft. convent, to John McShain Inc., 3 W. Franklin St., **$998,200**. Bids 10/17. CD 9/28.

Neb., Lincoln—HOSPITAL—St. Elizabeth Hospital, Sister M. Pacifca, supt., 1145 South St., hospital addn., to W. J. Assenmacher Co., 625 N. 17 St., **$400,000**. John Latenser & Sons, 1307 Farnam St., Omaha, archts. CD 5/5.

▲ **N. J., Bloomfield**—HOUSES—Carol Management Corp., 12 E. 48 St., New York, 17, N. Y., Forest Hill Manor addn. for 464 families on 25 acre tract bounded by Belleville Ave., Davey St., Forest Hill Field Club and Woodland Rd. Owner builds **$3,500,000**. Kelly & Gruzen, 80 Fifth Ave., New York, 3 N. Y., archts.

N. J., Roselle—SHOPPING CENTER—Milton L. Ehrlich Inc., 1 Madison Ave., New York, 10 N. Y., shopping center on 5 acre tract at Wood Ave. and Raritan Rd. Owner builds. **$600,000**. Chapman, Evans & Delehanty, 50 Broadway, New York, 4, N. Y., archts.

▲ **N. J., Woodcliff Lake**—HOUSES—Woodcliff Rock Estates c/o M. George Vuinovich, Alpine, 180 one family houses on tract, Rose Ave. Owner builds, **$4,000,000**.

N. Y., Kew Gardens—SHOPPING CENTER—Sidney & Arthur Diamond, 570 Lexington Ave., New York, Zone 22, retail shopping center in block bounded by Union Turnpike, Main St., 79 Ave. and 146 St. Owner builds. Approx. **$300,000**. Boak & Raad, 175 Fifth Ave., New York, Zone 10, archts.

N. Y., Merrick—HOUSES—Kay Manor Homes, c/o Alwin Cassens, Jr., archt., 116-55 Queens Blvd., Forest Hills, 80 one family houses on tract at Camp and Sterling Aves. Owner builds. Approx. **$800,000**.

▲ **N. Y., New Hyde Park**—HOMES—Scarpineto Bros., c/o William Sambur, archt., 160-16 Jamaica Ave., Jamaica, Herricks Homes, 350 one family houses, on tract at Manhasset Rd. and Moore St. Owner builds. Approx. **$5,500,000**.

▲ **N. Y., Roslyn**—HOMES—Fairfield Park Homes, c/o Matern & York, archts., 90-04 161 St., Jamaica, 130 one family homes on tract Locust Lane and Power House Rd Owner builds. Approx. **$2.000,000**

▲ **Pa., Pittsburgh**—SCHOOL—Carnegie Institute of Technology, Schenley Park, Pittsburgh, 4 story, bsmnt., L-shaped, brick, granite, steel School of Industrial Administration, to Crump, Inc., 4031 Bigelow Blvd., Approx. **$1,000,000.** Bids 10/25. CD 10/18.

Tex., Abilene—DUPLEXES—Southwest Apartments, Inc., Abilene, low rent duplexes. Owner builds. **$325,000.** CD 10/30.

Tex., Fort Worth—DWELLINGS—Arlington Heights West Corp., 200 Houston St., 40 addnl. dwellings, to J. D. Teague, 3207 N. Crump St., Approx. **$305,000.** CD 10/27.

Tex., Houston—DWELLINGS—S. N. Adams, 4001 Westheimer Rd., 12 dwellings. Owner builds. **$295,000.** CD 10/6.

Tex., Houston—CHURCH—Church of Christ, 1111 Texas Ave., 3 story, bsmnt. church addn., to American Constr. Co., 410 Rusk Bldg., **$385,000.** CD 11/3.

Tex., Houston—APARTMENTS—Melvin A. Silverman, 6205 Almeda Rd., 50 addnl. Negro apartment units, own forces. Approx. **$250,000.** CD 9/13.

Tex., McAllen—APARTMENT—Frontier Arms Apartments, c/o Mike Robertson, McAllen, 24 apartment units, own forces. **$265,000.** CD 7/17.

Tex., Midland—HOUSING—James K. Boyce, Midland, addnl. housing. Owner builds. **$275,000.** CD 11/3.

Tex., San Angelo—HOUSING—Manny Goldberg, 2318 Waco St., housing. Owner builds. **$250,000.** CD 11/3.

Tex., San Antonio—DWELLINGS—Orts Constr. Co., 814 Gunter Bldg., 30 addnl. dwellings, various locations. Owner builds. Approx. **$265,000.** CD 11/3

Tex., San Antonio—DWELLINGS—Quincy Lee Constr. Co., 211 Olmos Dr. West, 40 dwellings, (new extens. on West Ave.). Owner builds. Approx. **$250,000.** CD 11/3.

Tex., San Antonio—DWELLING—Frank Robertson, 1423 Majestic Bldg., 30 dwellings. Owner builds. Approx. **$250,000.** CD 11/6.

Wash., Spokane—HOUSES—River Ridge Homes, Inc., N4500 King Ct. 34 houses, Northwest Blvd., King and Royal Cts. day labor, **$357,400.** CD 11/3.

Wash., Wenatchee—**BANK—National Bank of Commerce**, 2 Ave. and Spring St., **Seattle, Zone 1**, branch bank, to Vandivort Constr. Co., and Havorson Constr. Co., Wenatchee, **$259,019.** G. W. Stoddard & Assocs., 1213 Westlake Ave. N., Seattle, archts. CD 11/3.

INDUSTRIAL BUILDINGS

BIDS ASKED

Tex., Houston—WAREHOUSE—Bids Asked—Bemis Bag Co., 2210 Brooks St., warehouse. $90,000. Northrop & Northrop, 3940 Main St., archts.

Tex., Houston—LAUNDRY PLANT—Bids Asked—O'Bannion Williams, 1103 Bayland St., laundry plant. $90,000. Milton McGinty, 2425 Ralph St., archt.

SOON LETS CONTRACT

Ia., Cherokee—WAREHOUSE, etc.—Cherokee County Rural Electric Assn., Cherokee, soon lets contract warehouse, shops with offices for REA Association. $73,000. Wm. Beuttler, Insurance Exchange Bldg., Sioux City, archts. CD 10/4/49, under Iowa Unclassified.

N. C., Charlote—PLANT—At office M. N. Marsh, archt., Chatham Bldg., soon lets contract Main Bldg. No. 2 addn. for Old Dominion Box Co. Inc., 528 Turner Ave.

Tex., Dallas—SALES, SERVICE, SHOP—Dick Price Motor Co., 2100 N. Harwood St., soon lets contract auto sales, service, shop. $100,000. Extended date. Wiltshire & Fisher, Merchants State Bank Bldg., archts. CD 11/1.

Ont., Toronto—WAREHOUSE—Gair Co. Canada Ltd., 372 Bay St., soon lets contract 1 story, 92x288 ft., concrete block, brick, steel storage warehouse, Industry St. and Ray Ave. $100,000. Shepherd & Powell, 57 Bloor St. W., engrs. CD 7/9/47.

CONTRACTS AWARDED

Ala., Birmingham—PLANT—W. J. Bullock Co., 1501 Erie St., mfg. plant addn., to Wilborn Constr. Co., 830 2 Ave. N., **$250,000.**

Calif., Bell Gardens—LOCOMOTIVE—General Motors Corp., Argonaut Realty Div., 485 W. Milwaukee St., Detroit, Mich., 30,000 sq. ft. locomotive bldg. addn., to J. A. McNeil Co., 714 W. Olympic Blvd., Los Angeles. Bids 10/11. CD 10/3.

Calif., East Los Angeles—WAREHOUSE—S. C. Johnson & Son, Inc., Racine, Wis., brick warehouse, to T-S Constr. Eng. Inc., 600 St. Paul Ave., Los Angeles. Approx. **$150,000.** Albert C. Martin & Assoc., 333 S. Beaudry St., Los Angeles, archts.

Calif., Oakland—FACTORY—Cochrane & Celli, 8855 San Leandro St., factory, to Indenco, 656 31 St. Approx. **$75,000.**

Fla., Miami—PLANT—Dupont Heights Industrial Center, c/o contractor, mfg. plant, to Robert M. Merritt, 4014 Chase Ave., Miami Beach. **$150,000.** CD 11/2, under LB.

Ill., Chicago—FACTORY—Berns Mfg. Co., 3040 N. Rockwell St., Zone 18, 21,000 sq. ft., steel, brick, concrete factory, to A. J. Greenberg & Assoc., 165 E. Erie St., Zone 11. **$150,000.** Awarded 10/23. CD 10/27.

Ill., Chicago—FACTORY—McDoniel Iron Wks., 8974 S. State St., Zone 19, factory addn., to Olson & Berg, 7956 Rhodes Ave., Chicago, Zone 19, $72,000. Ben & Geo. Larson, 506 W. 63 St., Zone 21, archts. Awarded 11/2.

Ill., Elgin—FACTORY—Chicago Rawhide Mfg. Co., River Rd., factory addn., to Illinois Hydraulic & Constr. Co., 28 N. Crystal St., **$80,000.** Awarded 10/30. Chas. Bohasseck, 333 N. Michigan St., Chicago, Zone 1, archt.

Ill., Galesburg—TERMINAL—Dohrn Transfer Co., 208 18 St., 1 story, bsmnt., 90x192 ft., truckline terminal and steel in concrete loading docks, to Ostrom & Mcguire, Galesburg. **$180,000.**

Ill., Melrose Park—PLANT—International Harvester Co., 180 N. Michigan St., Chicago, Zone 1, erecting 1 story plant addn., to Ragnar Benson, Inc., 4744 W. Rice St., Chicago, Ill. CD 9/11.

Kan., Wichita—WAREHOUSE—United Sash & Door Co., 251 S. Rock Island St,. warehouse, to Sodeberg Constr. Co., 910 E. Minneapolis St. **$80,000.** Guy Shelley, 814 S. Marcelene Terrace, archt.

La., New Orleans—WAREHOUSE—Geo. H. Lehleitner & Co., Inc., 4640 S. Carolton Ave., warehouse, to E. B. Ludwig Constr. Co., 1350 Jefferson Hy. Approx. **$250,000.**

La., New Orleans—WAREHOUSE—Ware Cotton Bating Co., Inc., 1000 S. White St., warehouse, to E. B. Ludwig Constr. Co., 1350 Jefferson Hy. Approx. **$125,000.**

Mich., Battle Creek—PLANT—Battle Creek Inquirer & News, Thompkins and West Van Buren Sts., 2 story, 45,000 sq. ft. bsmnt., brick, steel, concrete newspaper plant, Thompkins St., to Phelps-Wagner Builders, Inc., Battle Creek. **$435,000.** CD 10/6.

Mich., Chelsea—FACTORY—Federal Screw Works, S. Main St., 1 story, 100x170 ft., brick, 51,000 cu. ft. factory addn., Main St., to John Cooley Co., 509 Fox Bldg., Detroit, **$156,000.** CD 3/29/45.

Minn., St. Paul—GARAGE—Kline Oldsmobile Co., 1469 University Ave., 1 story, 75x121 ft. garage 1465 University Ave. Owner builds, **$85,000.** Abbott-Angelikis, Inv., 704 Hennepin Ave., Minneapolis, archts.

O., Dayton—FACTORY—Standard Register Co., Campbell St., 2 story, 100x120 ft., factory addn., addn. to engineering research and mechanical bldg., to Austin Co., 16112 Euclid Ave., Cleveland. Approx. **$250 000.**

Tenn., Knoxville—WAREHOUSE—House-Hasson Hardware Co., c/o contractor, warehouse, to Johnson & Willard, 422 W. Front Ave. Approx. **$135,000.**

Tex., Brenham—PLANT—Kosland Mfg. Co., Giddings, furniture mfg. bldg., own forces. **$75,000.**

Tex., Dallas—PLANT—Perlite Products Corp., c/o Cooper C. Drury, 4214 N. W. Hy., prefabricated steel plant, sub-contracts. Approx. **$115,000.** CD 7/28.

Tex., El Campo—COTTON GIN—Modern Farmers Co-operative Society, Ed. Peterson, pres., El Campo, cotton gin plant unit, Purchase and Hire. Approx. **$100,000.** CD 10/30.

Tex., Houston—WAREHOUSE—Magnus Metal Div. of National Lead Co., 1415 Hardy St., warehouse, own forces. **$79,000.** CD 3/6.

Tex., Houston—WAREHOUSE—Wm. D. Morse, 1319 Louisiana St., warehouse. Owner builds. **$73,500.**

Wash., Seattle—TANK, etc.—Great Northern Ry., 175 E. 4 St., S. Paul, Minn., tank and dike, day labor. **$120,000.** CD 11/8.

Wash., Shelton—PLANT—Simpson Logging Co., Shelton, 40x200 ft. bldg. to house dryer, day labor. **$250,000** with equip. CD 11/8.

W. Va., Wheeling—BAKERY—Continental Bakery Co., Wheeling, 2 story, 22x91 ft., brick, block bakery addn., to Byrum Constr. Co., 12 and Water Sts. **$214,840.** CD 6/19.

Wis., Madison—WAREHOUSE, etc.—Wisconsin Electric Co-operative, 303 E. Wilson St., 1 story, 100x250 ft., part quonset brick, steel warehouse-office bldg., to J. H. Findorff & Son, Inc., 601 W. Wilson St.

Wis., Milwaukee—TRUCK TERMINAL, etc.—Royal Transit Co., 119 W. Scott St., Zone 4, concrete, steel, brick, block truck terminal, incl. 1 story bsmnt., 60x80 ft. office; 1 story 60x120 ft. garage, 50x153 ft. loading dock, to Ray J. Moths Co., 3901 W. Rohr Ave., Zone 9, **$85,000.** Bids 10/19. CD 10/10.

Wis., Milwaukee—DOCK STORAGE—A. O. Smith Corp., 3533 N. 27 St., Zone 6, 1 story, 150x145 ft., steel, concrete block dock storage bldg., to Wis. Bridge & Iron Co., 5023 N. 35 St., Zone 9, approx. **$100,000.** H. A. Kieson, c/o contractor, engr.

Wis., Plymouth—FACTORY—Passini Cheese Co., R2, 2 story, 46x104 ft., rein.-con., concrete block cheese factory addn., to Charles Smith, Sheboygan. Satre & Senecall, 707 Center Ave., Sheboygan, archts. CD 10/31.

Wis., West Milwaukee—FACTORY—Pressed Steel Tank Co., 4601 W. Lincoln Ave., Milwaukee, Zone 15, 1 story, 142x161 ft., steel, brick factory addn., to Hunzinger Constr. Co., Sta. K, Milwaukee, Zone 13, approx. **$142,000.** Eschweiler & Eschweiler, 724 E. Mason St., Zone 2, archts.

Alta., Calgary—WAREHOUSE—Hobbs Glass Ltd., 325 10 Ave., concrete, brick, steel warehouse, to Larwill Constr. Ltd., 111 Third St. **$141,000.** Rule-Wynn & Rule, 25 8 Ave., archts.

Ont., Meaford—PLANT—Amerock, Inc., Rockford, Ill., U. S. A., plant, day labor. **$100,000.**

Ont., Port Colborne—WAREHOUSE—Maple Leaf Milling Co. Ltd., Port Colborne, concrete, steel, brick warehouse, to Gardner Constr. Co., 7 Riverbank St., Welland. **$250,000.**

Ont., Toronto—WAREHOUSE, etc.—Alloy Metal Sales Ltd., 881 Bay St., 33,280 ft., brick, warehouse and office, Fleet and Sherbourne Sts., to Jackson-Lewis Co. Ltd., 80 King St. W. Approx. **$325,000.** Awarded 11/6. N. A. Armstrong, 19 Melinda St., archts.

Ont., Toronto—PLANT—Trailmobile (Canada) Ltd., 401 College St., 1 story factory plant, Eglinton Ave. E. near Pharmacy Ave., Scarborough Twp., to Gatehouse Bros. Ltd., 86 Adelaide St. E. Approx. **$300,000.** Awarded 11/4. CD 8/29.

Ont., Windsor—PLANT—Duplicate, Windsor Ltd., 1850 Walker Rd., 2 story, 50x72 ft., steel frame, brick, plant addn., to L. McGill Alan, Ltd., 44 Wyandotte St. E. Approx. **$250,000.** Allward & Gouinlock, 57 Bloor St. W., Toronto, archts.

Que., Montreal—FACTORY—Liquid Steel Paint Products Ltd., 5584 Christophe Columb St., factory, to City Constr. Co. Ltd., 275 W. St. Zotique St. Approx. **$70,000.** Crevior & Assocs., 5276 Notre Dame de Grace Ave., archts.

Que., Montreal—WAREHOUSE—Benjamin News Co., 973 St. Antonne St., concrete, brick warehouse, to Main Constr. Co. Reg'd., 4535 City Hall. **$135,000.**

Que., Montreal—FACTORY—L. H. Packard & Co. Ltd., 729 St. Antoine St., factory, Boyce St., to Pentagon Constr. Co. Ltd., 1225 Bishop St. Approx. **$400,000.** David & David, 1440 W. Ste. Catherine St., archts.

Que., St. Eustache—GARAGE, etc.—National Constr. Co., 4209 Brebeauf St., Montreal, 1 story, 75x150 ft., concrete, garage and showrooms, on Highway, own force, **$150,000.** P. Colangelo, 3710 Cote St. Catherine Rd., Montreal, **archt.**

UNCLASSIFIED

BIDS ASKED

Que., Petite Madeleine—WHARF—B.A. 11/22—Acting Secy. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., wharf, Aporox. $100,000. Plans deposit $50. R. Blais, c/o owner, engr. CD 3/3.

N. Y., Brooklyn—DC CONNECTIONS—B.A. 11/24—Bd. Transportation, 250 Hudson St., New York, Zone 13, furnishing, installing DC connections and associated work for Culver Line, BMT Div., from West 8 St. to Ditmas Ave. and Line B, IND Div., Ditmas Ave. to Seeley St.

Pa., West Chester—SWIMMING POOL—B.A. 11/29—General State Auth., 18 and Herr Sts., Harrisburg, general contract; heating, plumbing, electrical work, swimming pool and gymnasium addn. to West Chester State Teachcers College. $500,000. Plans deposit $10 each. H. A. Kuljian & Co., 1200 N. Broad St., Phila., archts. A. F. Jones, c/o owner, ch. engr. CD 6/15.

Que., Felecite—WHARF—B.A. 12/6—Acting Secy. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., wharf, Approx. $124,000. Plans deposit $20. R. Blais, c/o owner, engr.

LOW BIDDERS

† **Colorado**—TRANSMISSION LINES—Bureau Reclamation, Dpt. Interior, Fort Collins, constr. 72 mi. Brighton-Hoyt-Brush 115-kv transmission line, Colorado-Big Thompson Proj., Spec. 3193, from Malcolm W. Larson, 4080 Gilpago St., Denver, **$516,516,** Est. $502,557. CD 9/26.

Md., Crownsville—STEAM LINES—State, Dpt. P. Imprvts., 506 Park Ave., Baltimore, Zone 2, underground steam lines, from J. W. Marchant, 2127 N. Dukeland St., Baltimore, **$55,650**, Turpin, Wachter & Assoc., 1004 N. Charles St., Baltimore, engrs., John B. Funk, 506 Park Ave., Baltimore, Zone 2, ch. engr.

Ont., Toronto—HARBOR IMPRVS.—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., Toronto Harbor Imprvs., from McNamara Constr. Co. Ltd., 42 Industrial St., Leaside, Approx. **$221,892.** CD 10/17.

CONTRACTS AWARDED

Fla., Daytona Beach—MOTOR COURT—T. C. Great & Walter Slawski, Daytona Beach, motor court, Owner builds, **$170,000.**

Tex., Austin—GENERATOR FOUNDATION, etc.—Board Regents, University of Texas, Administration Bldg., turbo-generator fdn. and spray pond basin, to E. B. Snead, Littlefield Bldg., **$54,200.** R. L. White, c/o owner, engr.

Tex., Muleshoe—TELEPHONE LINE—Five Areas Telephone Co-operative, Inc., Muleshoe, rural telephone line exten., Baily Co., force account. Approx. **$90,000.**

Tex., Temple—PARK—City, municipal park development, Purchase and Hire. **$55,000.**

Wash., Anacortes—WOODEN TOWERS, etc.—Coos Bay Pulp Corp., Anacortes, two 90 ft. wooden towers, new acid settling box new pump. equip. control valves and acid lines, to Brooks Lumber Co., Orleans and Kentucky Sts., Bellingham, **$80,000.**

Ont., London—COLISEUM—City, Queens Park Coliseum at Western Fair Grounds, to Putherbough Constr. Co., 320 Colborne St., Approx. **$1,350,000.** CD 10/20.

Ont., Toronto—SUBWAY, etc.—Toronto Transportation Comn., 35 Yonge St., supplying unfabricated structural steel for Sect. S-5A, Yonge St. Rapid Transit Route, to Bethlehem Steel Export Corp., Royal Bank Bldg.*** supplying reinforcing steel bars for Yonge St. Rapid Transit Route, to Burlington Steel Ltd., Hamilton*** supplying electrical metallic tubing, for Yonge St. Rapid Transit Route, to Northern Electric Co. Ltd., 131 Simcoe St., Toronto. CD 10/3.

(Proposal Advertisements see pp. 109 to 111)

OFFICIAL PROPOSALS

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Bids: November 27, 1950 (168)

WATER MAIN EXTENSION SOUTH FALLSBURG WATER DISTRICT TOWN OF FALLSBURGH, N. Y.

1. Sealed proposals for the installation of Water Mains and accessories in the South Fallsburg Water District, Town of Fallsburgh, N. Y. will be received by the Town Board at the Town Clerk's Office, South Fallsburg, until 2:00 o'clock, P.M., November 27, 1950, and there publicly opened and read immediately thereafter.
2. The work will consist of providing all labor, materials (except pipe) equipment and incidentals required for the construction of approximately 9600 feet of 8-inch diameter mains, including valves, hydrants and services.
3. Plans, specifications, bidding and contract documents may be examined at the Office of the Consulting Engineers, Alexander Potter Associates, 50 Church Street, New York 7, N. Y. and there obtained upon a deposit of FIFTEEN ($15.00) DOLLARS PER SET. Full refund of the deposit will be made to actual bidders for return of One (1) Set, in good condition within two weeks after closing date of bids; refund for return of all other sets, in good condition, within the same period, will be Fifty Percent (50%) of the deposit.
4. All proposals must be on the form contained in the Specifications furnished by the Town.
5. All bids must be accompanied by a Certified Check or Acceptable Bidder's Bond in the amount of Ten (10) Percent of the amount of the Bid, made payable to the Town of Fallsburgh. Said checks will be returned to all, except the three (3) lowest bidders, not later than ten (10) days after opening of bids.
6. The successful bidder will be required to furnish a Performance Bond conditioned upon the faithful performance of the contract and upon the payment of all persons supplying labor and furnishing materials on the construction of the work.
7. No bidder may withdraw his bid within thirty (30) days after closing date for receipt of bids.
8. The Town Board reserves the right to reject any or all bids and to waive any informality in the Bid.

TOWN OF FALLSBURGH, N. Y.
By: Mortimer Michaels
Town Supervisor.

Dated October 25, 1950.

Bids: December 5, 1950 (182)

Public Housing Project

The City of Roanoke Redevelopment and Housing Authority will receive bids for the construction of Public Housing Project No. VA-11-2 consisting of seventy-six (76) building comprising three hundred (300) dwelling units and an Administration Building on land situated on the North by Liberty Road, on the west by Burrell Street, on the South by Whitten Avenue, on the East by Lukens Street, in the Northwest section of Roanoke, Virginia until 12 o'clock noon Eastern Standard Time, on the 5th day of December, 1950, at the office of City of Roanoke Redevelopment and Housing Authority, 401 Luck Ave., S.W., Roanoke, Virginia, at which time and place all bids will be publicly opened and read aloud.

Bids will be received only in the form of one lump sum for all the work involved.

Proposed forms of contract documents, including plans and specifications, are on file at the office of the City of Roanoke Redevelopment and Housing Authority, the office of the Associated Housing Consultants, and the Chamber of Commerce, Roanoke, Virginia.

Copies may be obtained at the office of the City of Roanoke Redevelopment and Housing Authority, 401 Luck Avenue, Roanoke, Virginia. A deposit of $75.00 for each set will be required as a guarantee of the return of the documents within 10 days after bid opening. Full refund will be made on deposits for not more than five (5) sets to each prime contract bidder. In all other cases refund will be made in the amount of 60% of the deposit. No split or partial sets will be issued.

Each bid shall be accompanied by a bid security in an amount equal to five (5%) per cent of the bid, in the form of a certified check or bank draft, payable to the City of Roanoke Redevelopment and Housing Authority, U. S. Government Bonds (at par value), or a satisfactory bid bond executed by the bidder and acceptable corporate surety.

An amount of the deposit equal to 5% of the amount of the bid shall be retained by the Authority if the successful bidder fails to execute a contract within 10 days after the award or fails to give satisfactory surety.

The successful bidder will be required to furnish and pay for satisfactory performance and payment bond or bonds in the amount of 100% of the amount of the bid, which bond or bonds shall be endorsed by a properly empowered representative of a surety company, which company shall be satisfactory to the City of Roanoke Redevelopment and Housing Authority and authorized to do business in the Commonwealth of Virginia.

Attention is directed to the requirement that no less than the minimum salaries and wages as set forth in the specifications shall be paid on this project.

All contractors are notified that they must be licensed under the prevailing laws of the Commonwealth of Virginia governing their respective trades.

The City of Roanoke Redevelopment and Housing Authority reserves the right to reject any or all bids or to waive any informalities or irregularities in the bidding.

No bid may be withdrawn for a period of thirty (30) days subsequent to the opening of bids without the consent of the City of Roanoke Redevelopment and Housing Authority.

City of Roanoke Redevelopment
and Housing Authority
John H. Windel
Chairman

Bids: December 5, 1950 (181)

New Jersey Turnpike Authority

• • •

Sealed proposals will be received by the New Jersey Turnpike Authority for:

CONTRACT NO. 48

The work to be performed under this Contract involves the construction of two 38'-0" wide reinforced concrete roadway deck slabs upon the superstructure steelwork which will be constructed under Contract No. 20 between the South Abutment ¢ Station 466+48.16 and the north Abutment ¢ Station 535+95.41 and other incidental work in connection with the construction of the Passaic River Bridge which will form a part of the New Jersey Turnpike in the City of Newark in Essex County and the Town of Kearny in Hudson County, respectively.

Principal Items of work include:

Concrete in Roadway Deck Slabs	11,000 Cu. Yds.
Reinforcement Steel	3,000,000 Lbs.
Storm Drain (Various Sizes)	3,000 Lin. Ft.
Galvanized Wrought Iron Troughs	1,750 Lin. Ft.
Protection of Railroad Traffic	Lump Sum

Proposals will be received at the office of the New Jersey Turnpike Authority, 65 Prospect Street, Trenton ~~8, New Jersey~~, until 10:30 o'clock on the morning of December 5, 1950, and thereafter in the Veterans room of the War Memorial Building, Memorial Drive at Willow Street, Trenton, New Jersey, until 11:00 A.M. on the same date, at which latter time and place said proposals will be publicly opened and read.

The receipt and opening of proposal is subject to proper prequalification of the bidder in accordance with the regulations adopted by the New Jersey Turnpike Authority. Bidders must also submit with their proposal a revised financial statement and a statement of plan and equipment.

Contract documents may be seen, and may be inspected by prospective bidders during office hours, after November 10, 1950, at the office of the New Jersey Turnpike Authority, 65 Prospect Street, Trenton 8, New Jersey, and at the office of the Engineer, Ammann & Whitney, 185 Raymond Boulevard, Newark, New Jersey, or 76 Ninth Avenue, New York 11, New York.

Contract Documents will be furnished for $5.00 for each set, upon application to the Authority. The payment will not be refunded and contract documents are not required to be returned.

A set of Reference Drawings, Nos. 1 to 41, inclusive, for Contract No. 20, Superstructure Steelwork—Passaic River Bridge, will be furnished for $5.00 upon application to the Authority, 65 Prospect Street, Trenton 8, New Jersey. The payment will not be refunded and the reference drawings are not required to be returned.

Proposals must be made upon the standard proposal forms in the manner designated in the Standard Specifications for Construction of the New Jersey Turnpike and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and the number of the contract on the outside, and must be accompanied by a certified check drawn to the order of the New Jersey Turnpike Authority and a proposal bond, each for not less than five (5) percent of the amount of the proposal, but not less than $500.00 nor more than $200,000.00 and must be delivered with proposal on or before the hour named. Copies of the proposal form to be used for submitting proposals, of the form for proposal bond, of the form to be used for financial statement and plan and equipment statement to be submitted with proposal, and special addressed envelope are furnished in detached form with the Contract Documents.

The Contract will be awarded or proposals rejected within fifteen (15) days from the date of opening proposals. The right is reserved to reject any and all proposals.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast
Chairman

November 8, 1950

U. S. Government

GOVERNMENT OF THE DISTRICT OF COLUMBIA, DIRECTOR OF SANITARY ENGINEERING, D. C., October 23, 1950. SEALED PROPOSALS will be received in Room 509, District Building, 14th and 'E' Streets, N. W., Washington 4, D. C., until 2:00 p.m., EASTERN STANDARD TIME, November 30, 1950, and then publicly opened and read for GENERAL INSTALLATION AND CONSTRUCTION BRYANT STREET PUMPING STATION, Bryant Street, between 2nd and 4th Streets, N. W., Washington, D. C. Proposal forms, specifications and drawings may be obtained in the Office of Chief Clerk, E. D., Room 427, District Building, upon the deposit of a certified check made payable to the Collector of Taxes, D. C. in the amount of Twenty-five Dollars ($25.00) for each set. (Telephone National 6000, Extension 2378) (155)

(Continued on page 110)

OFFICIAL PROPOSALS

(Continued from page 109)

Bids: November 27, 1950 (180)

Painting Berth Numerals, Floor Striping and Unpainted Kitchen Walls

THE PORT OF NEW YORK AUTHORITY
NEWARK UNION MOTOR TRUCK TERMINAL
CONTRACT NJT-20

Sealed proposals for painting berth numerals, floor striping and unpainted kitchen walls at the Newark Union Motor Truck Terminal will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 8th Ave., New York 11, until 11:30 A.M. Monday, November 27, 1950, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Chief Engineer and copies will be furnished upon deposit of $10 per set. The deposit will be remitted if the documents are returned in good condition not later than 30 days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, November 16, 1950.

U. S. Government

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3236) will be received by Bureau of Reclamation, Lindsay, California, December 12, 1950, and then publicly opened for furnishing labor and materials and performing all work for the construction of earthwork, pipe lines and structures lateral 93.2W Station 0+00 to Station 357+91, and lateral 93.2E Station 0+00 to Station 123+72 and sublaterals, Lindmore Irrigation District, Friant-Kern Canal Distribution Systems, Central Valley Project, California. The work is situated in the vicinity of Strathmore, California. Principal items are approximately: 260,000 cu. yds., excavation; laying 270,000 linear feet of pipe; 235,000 cu. yds., backfill; and other work. Time allowed for completion will be 500 days. For particulars, address Bureau of Reclamation, Lindsay, California; or Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner.
(176)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3235) will be received by Bureau of Reclamation, Ephrata, Washington, December 7, 1950, and then publicly opened for furnishing labor and materials and performing all work for the construction of West Canal-Frenchman Hills Tunnel, Station 3119+74.27 to Station 3258+00, Columbia Basin Project. The work is situated approximately 20 miles south of Quincy, Washington. Principal items are approximately: 168,000 cu. yds. of excavation for canal; 77,000 cu. yds. of excavation for tunnel; furnishing and placing 708,000 lbs. of permanent steel tunnel supprots; 20,000 cu. yds. of concrete in tunnel lining; furnishing and handling 31,000 bbls. of cement; and other work. Time allowed for completion will be 1,000 days. For particulars, address Bureau of Reclamation, Denver Federal Center, Building 1-A, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner.
(175)

Department of Commerce, Bureau of Public Roads, November 3, 1950. SEALED BIDS will be received at the office of the Division Engineer, Bureau of Public Roads, 1440 Columbia Pike, Arlington, Virginia, until 11:00 a.m., E.S.T., DECEMBER 14, 1950, for Project 1J2, Baltimore-Washington Parkway, Anne Arundel County, Maryland. Steel Girder Spans on Concrete Abutments and Wings with Stone Facing, Grading, Drainage, Asphalt Concrete Pavement and other work. Length 0.275 Mile. The approximate quantity of the more important items are as follows: 95,000 cu. yd. Excavation, 2,350 cu. yd. Cement Concrete, 497,000 lb. Structural Steel and 220 cu. yd. Stone Masonry. Minimum wage rates have been fixed as required by law. For plans and specifications, a deposit of $10.00 cash or CERTIFIED check made payable to the Treasurer of the United States, will be required to insure their return within 15 days after the opening of bids. Plans, specifications and proposal forms may be obtained at the address given above. H. J. Spelman, Division Engineer. (174)

(Continued on page 111)

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Acchione Contracting Co 114
Air Compressor Rental Co 113
Albert Pipe Supply Co 116

Bass Engineering & Const. Co 115
Bendix Machinery Co., Inc 115, 116
Bevis Machinery Co 114

Coast Equipment Co 114, 115
Commercial Metals Co 116
Concrete Equipment Co 117
Construction Survey Corp 113
Crane Service Inc 113

Darien Corp. 115
Davidson Pipe Co., Inc 116
Day & Maddock Co., The 114
Drachman Steel Corp., Hy 117
Dyer Co., Inc., W. H 116

Ehrbar, Edward 115, 116
Ellis & Sons, Inc., Edward H 116

Fehrs Tractor & Equipment Co 115
Finn Co., N. A 116
Foster Co., L. B 115, 116
Frank, M. K 116

Griffin & Sons, L. I 116
Guion, H. P 115

Handy Thumb 113
Haynes Equipment Co., Inc 115

Kaiser Engineers—Div. of Kaiser Industries, Inc. 112
Koch Erecting Co., Karl 114

Martin Co., The 117
McKee & Co., Arthur G 112
Mississippi Valley Equipment Co 115

Nance & Vivadelli Co 115

Pfotzer E. & E. J 113

Queensboro Steel Corp 116

River Construction Corp 113
Robers Co., Ferd J 116

Sell, R. F 115
Shannon & Co., J. Jacob 115
Stone the Crane Man 116

Tagco 116
Texas Construction Co 115
Thomasville Stone & Lime Co 114

United Motor Sales 117

Walton Equipment Co., Inc 115, 117
White Co., David 113
Williams Construction Co 117
Wilson Engineering Corp 113

CONTRACTORS

Watch this Section

for New Projects

Publish your announcement thru the "Proposals Section" of Engineering News-Record and get their bids.

OFFICIAL PROPOSALS

(Continued from page 110)

Bids: November 28, 1950 (178)

Road Grading

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

ROUTE S49, SECTION 6 (GRADING)
Grading of Route S49, Section 6, Wildwood Boulevard to Grassy Sound Bridge Approach, Middle and Lower Townships, Cape May County. Length 1.922 miles.

Roadway Items

Estimated:

625,000 cu. yds. Borrow Excavation
3,500 cu. yds. Ditch & Channel Excavation
850 lin. ft. 12" & 18" Corr. Metal Pipe

Bids for the above will be received at the office of the State Highway Department, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, November 28, 1950, at eleven o'clock (11:00 A.M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: R. J. Abbott
State Highway Commissioner

Bids: November 28, 1950 (173)

Storm Drain

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

WHITE HORSE AVE. & SOUTH OLDEN AVE. STORM DRAIN
Construction of White Horse Avenue and South Olden Avenue Storm Drain from South Broad Street to Maple Shade School and from White Horse Avenue to Maddock Avenue, in Hamilton Township, Mercer County. Federal Aid Secondary Projects Nos. S-170(4) and S-130(1). Length 1.183 miles.

Estimated:

8,000 cu. yds. Roadway Excavation-Earth
15,800 sq. yds. 5" Macadam Base Course
15,800 sq. yds. 3" Mod. Pen. Mac. Inter. Course
2,580 tons Bituminous Concrete, FA-BC-2
5,168 lin. ft. Drainage
47 units Inlet and Manholes
6,760 lin. ft. Concrete Curb.
3,400 sq. yds. 4" Concrete Sidewalks

Bids for the above will be received at the office of the State Highway Department, Room 140 in the State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., on Tuesday, November 28, 1950, at eleven o'clock (11:00 A.M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

OFFICIAL PROPOSALS

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Secondary Project" authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements, and by Sections 2, 3 and 4, P. L. 521, 78th Congress, and is to be performed in accordance with the special provisions and requirements of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications, which provisions require that labor be employed from lists furnished by the State Employment Service, 6-12 Willow Street, Trenton, N. J. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all unskilled labor employed on this contract shall be $.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: R. J. Abbott
State Highway Commissioner

Bids: December 15, 1950 (177)

For the Construction of New Police Headquarters and Jail

Sealed proposals will be received by the City of St. Petersburg, Florida in the office of the City Manager, in the Municipal Building, St. Petersburg, at 11:00 A.M. (E.S.T.) Friday, December 15th, 1950, for The Construction of New Police Headquarters and Jail, at which time and place, the proposals will be publicly opened and read aloud.

Plans, specifications and contract documents will be open to public inspection at the office of the Associated Architects, Room 211 Taylor Arcade Building, St. Petersburg, and in the office of the Engineering Department in the Municipal Building, after November 15th, 1950, or may be obtained from the City Engineering Department upon deposit of Thirty-five Dollars ($35.00) for each set. The full amount of the deposit for one set of documents will be returned to each actual bidder but all other depositors will be refunded Twenty-five Dollars ($25.00) for each set of documents returned in good condition, within thirty (30) days after the opening of bids.

All proposals shall be on standard forms furnished by the City Manager and sealed and marked "PROPOSAL FOR CONSTRUCTION OF NEW POLICE HEADQUARTERS AND JAIL". Bids must be accompanied by a certified check or bid bond in the amount of not less than 5% of the bid. No bid may be withdrawn after the scheduled closing time for the receipt of bids for a period of thirty (30) days.

The City of St. Petersburg reserves the right to reject any or all bids and to waive irregularities and informalities.

THE CITY OF ST. PETERSBURG
Ross E. Windom,
City Manager

SEARCHLIGHT SECTION

EMPLOYMENT • BUSINESS • **OPPORTUNITIES** • EQUIPMENT—USED or RESALE

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$1.20 cents a line, minimum 4 lines. To figure advance payment count 5 average words as a line.

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INFORMATION.

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AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page. E.N.R.

NEW ADVERTISEMENTS received by November 17th at the New York Office 330 W. 42 St., N. Y. 18, will appear in November 30th issue subject to space available

---

ENGINEERING

We anticipate increasing our engineering organization during the next several months for the design of Oil Refinery, Blast Furnace, Open Hearth, Steel Mill and Power Plants.

These men should be qualified as draftsmen, designers, checkers or higher engineering skills on design of piping, instrumentation, pressure vessels, structural steel, concrete, platework, heavy mechanical equipment and electrical.

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P-8063, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

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by an

ELECTRIC UTILITY ENGINEERING SERVICE CORPORATION

located in New York City:

Structural Designer of 5 to 10 years responsible experience on design work including steel building structures, reinforced concrete structures. Some architectural experience is desirable. Good opportunity for advancement.

Hydraulic-Foundation Designer of 5 to 10 years responsible experience on design work including mass and reinforced concrete structures, dams, building foundations and other hydraulic structures. Good opportunity for advancement.

P-8178, Engineering News-Record
330 W. 42 St., New York 18, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

WANTED: EXPERIENCED Structural Designers in steel or reinforced concrete. Also, concrete detailers. Seelye, Stevenson & Value, 101 Park Avenue, New York, N. Y.

CONSTRUCTION EXECUTIVE Thoroughly experienced with building construction of all types. Should be graduate engineer who knows plans thoroughly. Must be able to deal with Owners and Architects. One accustomed to handling large volume of correspondence, interviewing subcontractors, awarding subcontracts. Must have ability to organize and manage jobs from main office. The man we want should know every phase of the building construction business, both engineering and management. Write stating age, health, experience, salary, when available. Fleisher Engineering & Construction Co., 936 Ellicott Square Bldg., Buffalo, N. Y.

CONSTRUCTION COMPANY, operating State of Florida, Alabama, and Georgia, require A No. 1 thoroughly experienced job superintendent. Must be able to produce excellent references as to character and experience record in general building construction, reinforced con. etc. Excellent opportunity for an experienced applicant, who can meet our requirements. P-8091, Engineering News-Record.

SANITARY ENGINEER Wanted—Manufacturer of waste treatment equipment with national acceptance requires skilled sanitary engineer for sales promotion work. Sanitary engineering experience, intimate knowledge of treatment processes essential. Must travel. Submit full particulars. P-8113, Engineering News-Record.

CIVIL ENGINEER with field and office experience to write architectural and civil specifications for building projects. Secure position with large organization. Salary commensurate with ability. Sverdrup & Parcel, Inc., 1118 Syndicate Trust Bldg., St. Louis 1, Missouri.

WANTED—BUILDING Estimator with a structural engineering background. State training, experience and wage desires. Write P-8153, Engineering News-Record.

SALES ENGINEER for cast iron pressure piping, preferably civil. Give resume of education, draft status, experience, salary expected, availability. All replies treated confidentially. P-8154, Engineering News-Record.

CIVIL ENGINEERS—General Layout Work on Bridge, Highway and Heavy Construction Throughout State of New Jersey for General Contractor. Reply P-8187, Engineering News-Record.

FLOOD CONTROL Engineer. Prefer engineer with general experience on water and flood projects and Corps of Engineers reports. Must be able to meet the public. Opportunity to affiliate with a progressive agency responsible for developing a sound State water control policy. Salary 4800 per year. P-8209, Engineering News-Record.

(Continued on the opposite page)

Engineers Wanted

Civil—Electrical—Mechanical—Structural

***Apply* KAISER ENGINEERS**
Division of Kaiser Industries, Inc.
1924 Broadway Oakland, California

DESIGNERS, DRAFTSMEN - ELECTRICAL - MECHANICAL - STRUCTURAL. JOB LOCATED IN MIDDLE WEST. EXCELLENT WORKING CONDITIONS. GOOD SALARY. OLD ESTABLISHED COMPANY.

P-8166, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

STRUCTURAL ENGINEER

Engineering and General Contracting firm with long successful record, requires a thoroughly trained and experienced designer familiar with all types of industrial construction. Pay will be consistent with experience, ability and willingness to accept responsibility. Location Milwaukee, Wis.

P-8163, Engineering News-Record
520 No. Michigan Ave., Chicago 11, Ill.

GENERAL CONSTRUCTION SUPERINTENDENT

By Midwest firm of engineers and contractors operating nationwide. Must be graduate engineer with not less than ten years experience in heavy industrial construction especially power plants, cement mills and processing plants. Give complete information.

P-8115, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

WANTED—SPECIFICATION WRITER

experienced in all phases of specification writing and preparation of contract documents, particularly for water and sewerage systems, sewage treatment plants and dams, by Pennsylvania firm. Give complete resume of training, experience, age, availability, salary expected and references in first letter.

P-8139, Engineering News-Record
330 W. 42 St., New York 18, N. Y.

To EMPLOYERS Who Advertise for MEN:

Frequently, when there are many applicants for a position, only the most promising letters are acknowledged. The other applicants never know whether their letters reached a prospective employer or not. These men often become discouraged, will not respond to future advertisements and even question their bona fide character.

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Information sent without obligation. Write today.

WILSON ENGINEERING CORP.
College House Offices - Dept. E.
Harvard Sq. Cambridge, Mass.

POSITIONS VACANT

(Continued from opposite page)

ENGINEERS WANTED, experienced in design preparation of plans and construction of water works, sewers, water treatment plants, and sewage treatment plants. State education experience and salary requirements. Answer P-8208, Engineering News-Record.

WANTED JUNIOR Engineering Graduate, two to four years experience, preferably irrigation or water supply. Starting salary $350.00 per month. Nevada Irrigation District, 144 South Auburn Street, Grass Valley, California.

MANAGER-OPERATOR for natural gas system. Excellent opportunity for young engineer with gas experience. State age, experience, salary expected and when available. Write P. O. Box 155, Quitman, Miss.

ENGINEER, CIVIL, experienced in drafting, quantity estimating, surveying and field supervision for general contractor. Write 5910 MacArthur Blvd. N.W., Washington 16, D. C.

ENGINEER, MECHANICAL experienced in detailing, quantity estimating, scheduling quantities and field lay out work for large piping installations. Write 5910 MacArthur Blvd., N.W., Washington 16, D. C.

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SALARIED PERSONNEL, $3,000-$25,000. This confidential service established 1920, is geared to needs of high grade men who seek a change of connection under conditions assuring, if employed, full protection to present position. Send name and address only for details. Personal consultation invited. Jira Thayer Jennings, Dept. L, 241 Orange St., New Haven, Conn.

SELLING OPPORTUNITY OFFERED

MAN WITH Construction experience to learn to estimate and sell ornamental iron, rolling steel doors, fire escapes, etc. with manufacturers' agent, lower Michigan. SW-8085, Engineering News-Record.

POSITIONS WANTED

PROFESSOR CIVIL Engineering; Assoc. M. ASCE; 40, Ph.D. Now occupying teaching position in leading university. Responsible academic and governmental engineering experience. Interested in post involving administrative and executive opportunities such as Department Headship. Excellent health. Minimum salary $7500. PW-8083, Engineering News-Record.

DRAFTSMAN STRUCTURAL, now employed, experienced in details, checking, design, concrete, timber plant layout, wants designing in Chicago, permanent. PW-8124, Engineering News-Record.

SALES-ESTIMATOR, engineer 15 yrs. experience building, heavy const. & paving desires salaried sales position. PW-8180, Engineering News-Record.

PLANT LAYOUT and Construction Engineer, age 47, experienced designer; piping, processing equipment, mechanical installations. Board and/or field work. Desires responsible position. Location no object. PW-8216, Engineering News-Record.

STRUCTURAL ENGINEER (Also a graduate architect MIT'2-44) with supervisory experience in responsibilities for Architect in drafting, design and engineering correlation. Offering 11 yrs. exp. incl. field construction, consulting, and drafting room supervision. Desire to better present salary at $5400. PW-8191, Engineering News-Record.

POSITIONS WANTED

QUARRY SUPT. Production Manager, 48 yrs. old, married. Twenty years commercial quarry experience in granite, trap and limestone. Thoroughly familiar modern methods stripping, drilling, blasting and crushing. Seek position where production and costs are the issue and quite willing to work on that basis. Construction companies intending to manufacture their own aggregate and steel companies running flux quarries could use my experience to good advantage. Available immediately for U. S. only. PW-8177, Engineering News-Record.

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GENERAL FOREMAN or Shop Super. in Str. Steel Fab. plant held position 12 years have 35 years exp. in this business. PW-8204, Engineering News-Record.

ACCOUNTANT-BOOKKEEPER—Mature, married. 20 years construction-experience. General Ledger, payrolls, taxes, etc., office management. Location immaterial. Experienced government contracts. Reasonable salary. PW-8205, Engineering News-Record.

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CIVIL ENGINEER, licensed professional engineer, with wide experience in structural steel and reinforced concrete design, desires part time work. Preliminary design and estimates. Preparation of contract plans and specifications PTWW-8160, Engineering News-Record.

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3—Wiley Steam Whirleys—Model 100 with 23'6" & 36' Gantrys
5—Gasoline Locomotives, Standard Gage, 8 & 12 Tons
25—Pumps—Various Sizes up to 12000 GPM
1—10 Ton FWD HD Platform truck.

Also miscellaneous other equipment from large Mississippi River Lock Project.
List and prices upon application.

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W-8080, Engineering News-Record
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Any Quantities
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W-7996, Engineering News-Record
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Phone Rector 2-3794

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Lowboy truck and trailer, 40- to 60-ton capacity, ¾ yard motor-crane, concrete aggregate bin, 100- to 150-ton capacity, 500-barrel cement bulk bin, ¾- or 1-yard rehandling bucket. Phone WOodley 4038 or write

E. & E. J. PFOTZER
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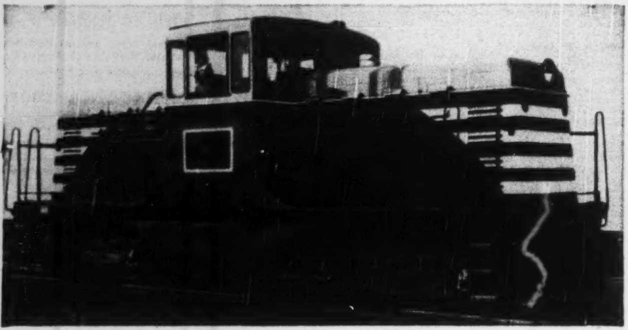
WANTED

BACK HOE ATTACHMENT FOR LIMA PAYMASTER

BOX 1737 PITTSBURGH 30, PA.

G.E. 44 TON DIESEL ELECTRIC LOCOMOTIVE



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2—Shovel Fronts for ¾ Yd. Bucyrus-Erie Type B Steam Shovels. Booms, Sticks & Dippers. Condition: Excellent. Price: $500.00 each.
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1—Well Drill, Loomis Model 44 Clipper Half Track Blast Hole. Diesel Powered. Condition: Good. Price: $1,000.00.
1—Well Drill, Loomis Model 1½ Clipper Blast Hole, Non-Traction. Diesel Powered. Condition: Good. Price: $1,000.00.
1—Well Drill, Loomis Model 44 Clipper Blast Hole, Non-Traction. Diesel Powered. Condition: Good. Price: $1,000.00.
1—Screen, Tyler Niagara 18″ x 4′ Type 100. 1 Surface #8269. Condition: Good. Price: $200.00.
1—Scale, Exact Weight Style #2225, 10 lb Tare Beam, Dial 25 lb. Under 5 lb. Over with Dustite Bagholder. Condition: Good.

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THOMASVILLE, PA.

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2000B MANITOWOC CRAWLER with boom lengths to 120 foot.

TRUCK CRANES with boom lengths to 110 foot.

GUY DERRICKS from 5 to 75 ton capacity.

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HOISTS, double and triple drum with swingers from 4,000 to 12,000 line pull.

COMPRESSORS from 105 to 210 cu. ft.

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820 crawler. Shovel & drag. Cat. D13000. Over $1000. New spare parts. Ready to work now.

41 crawler. Crane, clam, drag, hoe. Cat diesel.

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2—36″ Vertical Shaft Locks, 51″ x 6′ Chamber
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Neck Pieces and 12′ Shafting with Recess Ladders for Above

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2—Shovel Buckets for Bucyrus Erie 44B
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Excellent Condition. Cummins Diesels, used little in two years. Each with 65′ Booms. Additional 15′ Boom Section and 10′ Jib with One Dragline and 1¼ Yd. Shovel, fits both.

$39,000 FOB Trenton, N. J.

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DE 4-5178

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Because of the Thanksgiving Day Holiday, November 23rd, the "Searchlight" pages of the

November 30th Issue of

ENGINEERING NEWS-RECORD

Close for press earlier than the usual weekly closing time.

The cooperation of advertisers is solicited in forwarding new copy, or changes of copy, to reach us accordingly.

FINAL CLOSING TIME
Display and Undisplayed Ads
Friday, November 17th

PROPOSALS
Friday, November 24th

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Gas Powered—1200′ #80 Pipe and Fittings.
Poured 300 cu. yds. concrete only.

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1—30″ Dredge Pump
1—24″ Dredge Pump
1—2500 H. P. Motor, 260 RPM.

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36″ Bucket—New Machine Condition—
Fully Guaranteed.

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REX 200 DOUBLE PUMPCRETE
FOR SALE OR RENT

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Birmingham, Mich. Telephone: Detroit JO-4-6150

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7—**Buda** 6DC-844 diesels now on hand. Euclid engine replacements. Rock bottom price.

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NEW JACKS

60 ton Watson-Stillman Hydraulic
60% off list price
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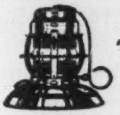

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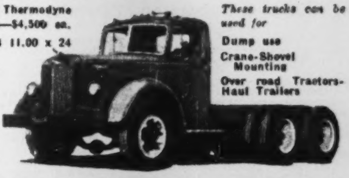

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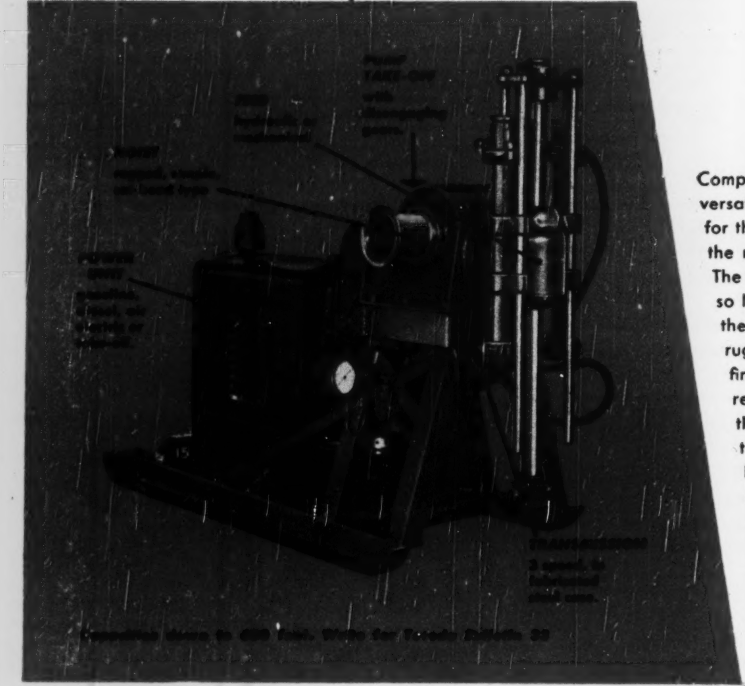

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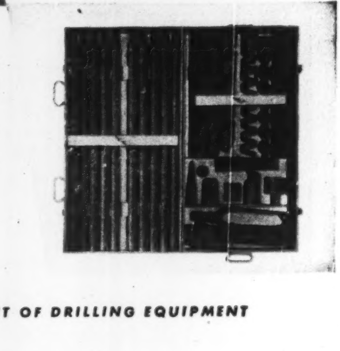

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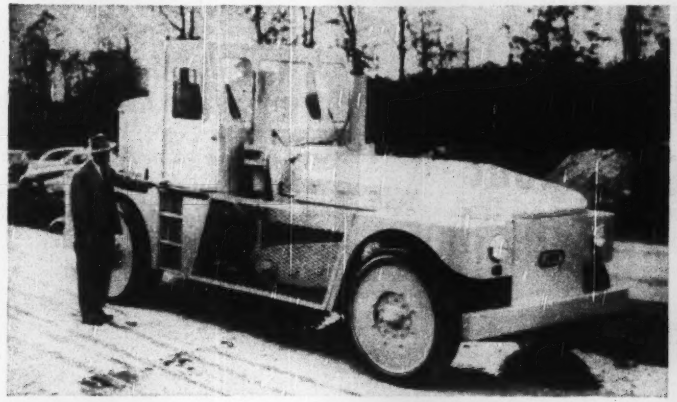
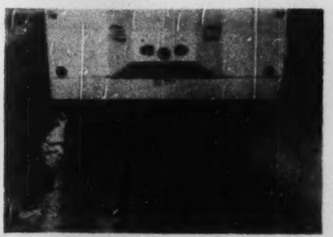


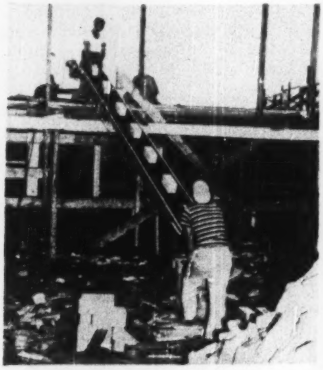


Twin Saws on Concrete-Cutting Machine Speed Pavement-Removal Jobs

PAVEMENT-CUTTING MACHINE has twin saws for cutting parallel grooves in concrete pavements. These saws cut sharp-edged 2-in.-wide grooves in the pavement, permitting the concrete to be removed in chunks by a backhoe or similar equipment. The machine is designed to reduce to a minimum the inconvenience caused by necessary street openings for repair of water mains or underground utility lines. The manufacturer claims the machine is faster, quieter, and more maneuverable and more economical than other comparable methods.

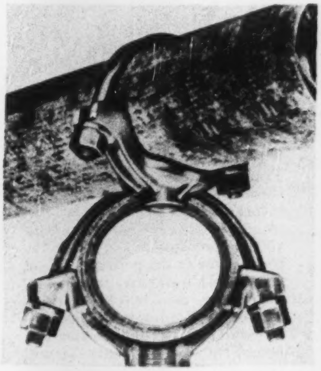
Mounted on four rubber tires and powered by a 75-hp gasoline engine, the 15-ton machine is equipped with both direct gear drive and dual-steer hydraulic drive. This results in cutting speeds ranging from 5 in. to 5 fpm. Travel speed is 12 mph.

The saws themselves consist of two large wheels carrying tungsten-carbide-tipped bits. Cutting capacity is 15 in. Rate of advance through 8-in. concrete with mesh reinforcement is 1 fpm, the manufacturer states. The machine carries 250 gallons of water, used to prevent dust and to cool the cutting bits.—JOY MFG. CO., HENRY W. OLIVER BLDG., PITTSBURGH 22, PA.



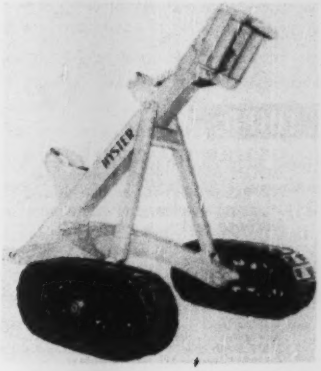
Block-Handling Conveyor

Brik-Toter conveyor is designed to speed delivery of brick, block, tile, or other materials to upper-story levels. It is 20 ft long, 14½ in. wide, weighs 385 lb, and has a rated load capacity of 1,200 lb. The 3-ply rough-top rubber belt is 12 in. wide. A totally enclosed ½-hp gear motor furnishes power for the Brik-Toter. A gasoline engine is available. Fixed speed of the belt is 60 fpm.—MAR-RAIL CONVEYOR CO., 560 YORK AVE., PAWTUCKET, R. I.



Single-Strap Pipe Clamp

New-type clamp is said to simplfy lateral pipe connections to branch and main pipelines. It employs special-shaped molded rubber and oil-resistant-type gaskets to effect a leak-proof seal. Wedging action of the resilient gasket develops from hydraulic pressure within the pipe plus a moderate tightening of the strap nuts. Extra-wide arc saddles are said to reduce pressures required to properly seat the gaskets.—SMITH-BLAIR, INC., SOUTH SAN FRANCISCO, CALIF.



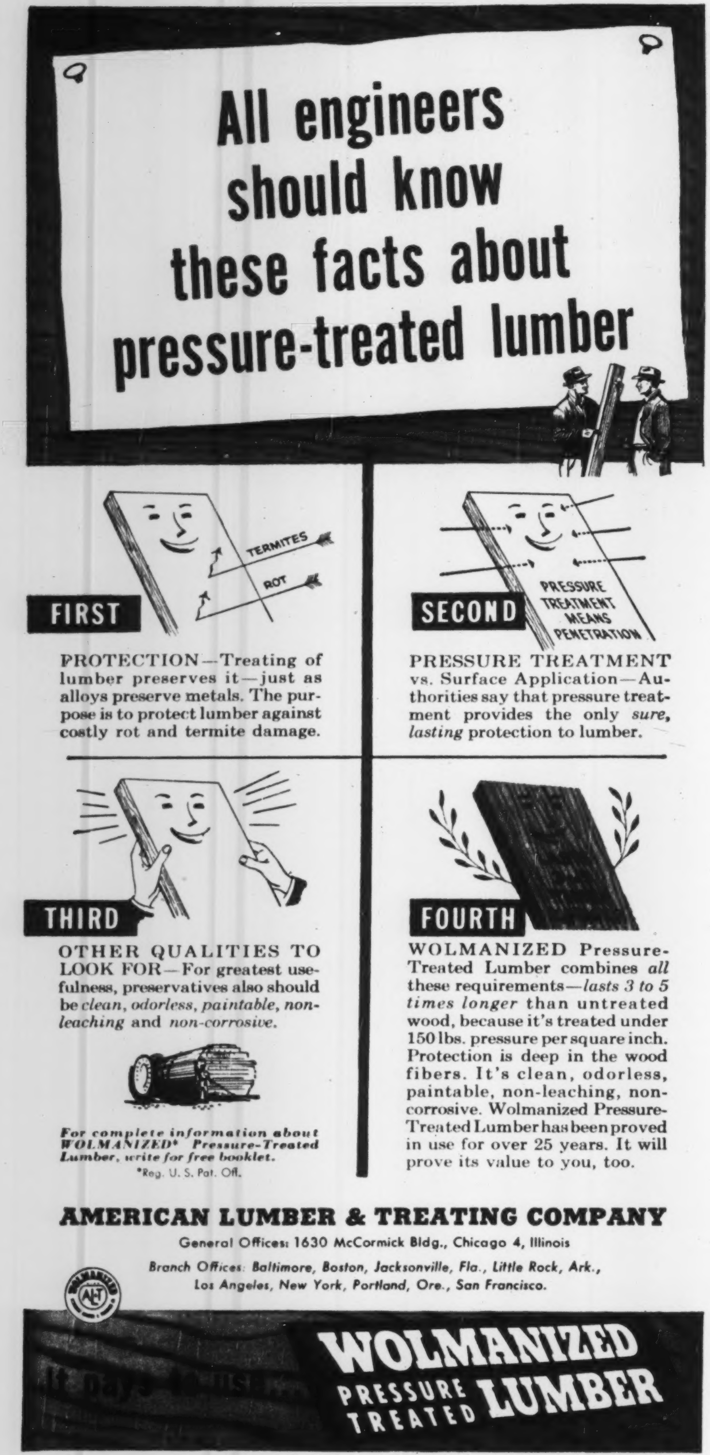
Improved Logging Arch

Model 78 arch is matched equipment for Caterpillar D7 and D8 tractors. Weight has been reduced, permitting an increase in speed and frequency of return trips. Roll height has been increased approximately one foot.—HYSTER CO., 2953 N. E. CLACKAMAS ST., PORTLAND 8, ORE.

Heavy-Duty Drum Pumps

New-model 400-lb pumps for lubricating equipment include: No. 1761

(Continued on next page)



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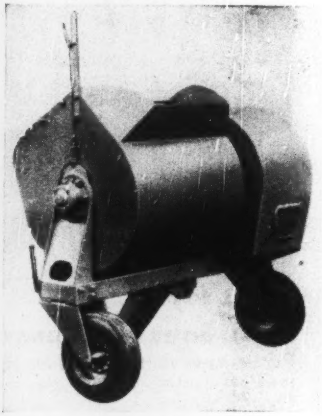
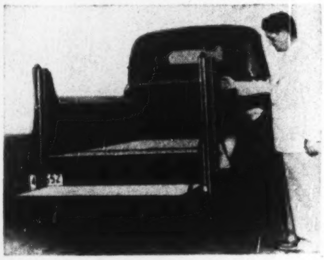


Tilting Plaster Mixer

Kwik-Mix plaster-mortar mixer has a 6-ft. capacity. A feature claimed is a semi-powered arrangement for tilting the drum. Through the action produced by the paddle shaft drive, the loaded drum tends to tilt itself when released for discharge. The drum also tilts in the opposite direction for quick, easy cleaning. Equipped with a 1-cyl air-cooled gasoline engine, power is transmitted by a multiple V-belt with enclosed reduction gears running in oil. Electric power is optional. Four non-clogging mixing blades, positioned at 90 deg around shaft for uniform action, are slotted for radial and longitudinal adjustment. Wheel gage is 60 in.—KWIK-MIX CO., SUBS. OF KOEHRING CO., PORT WASHINGTON, WIS.



Hydraulic Tailgate Loader

Hydro-Loader Model TG is built expressly for use on pickup trucks. It has a lift capacity of 650 lb. The hydraulic system is manually controlled. Lift time from ground to truck level

(*Continued on page 124*)

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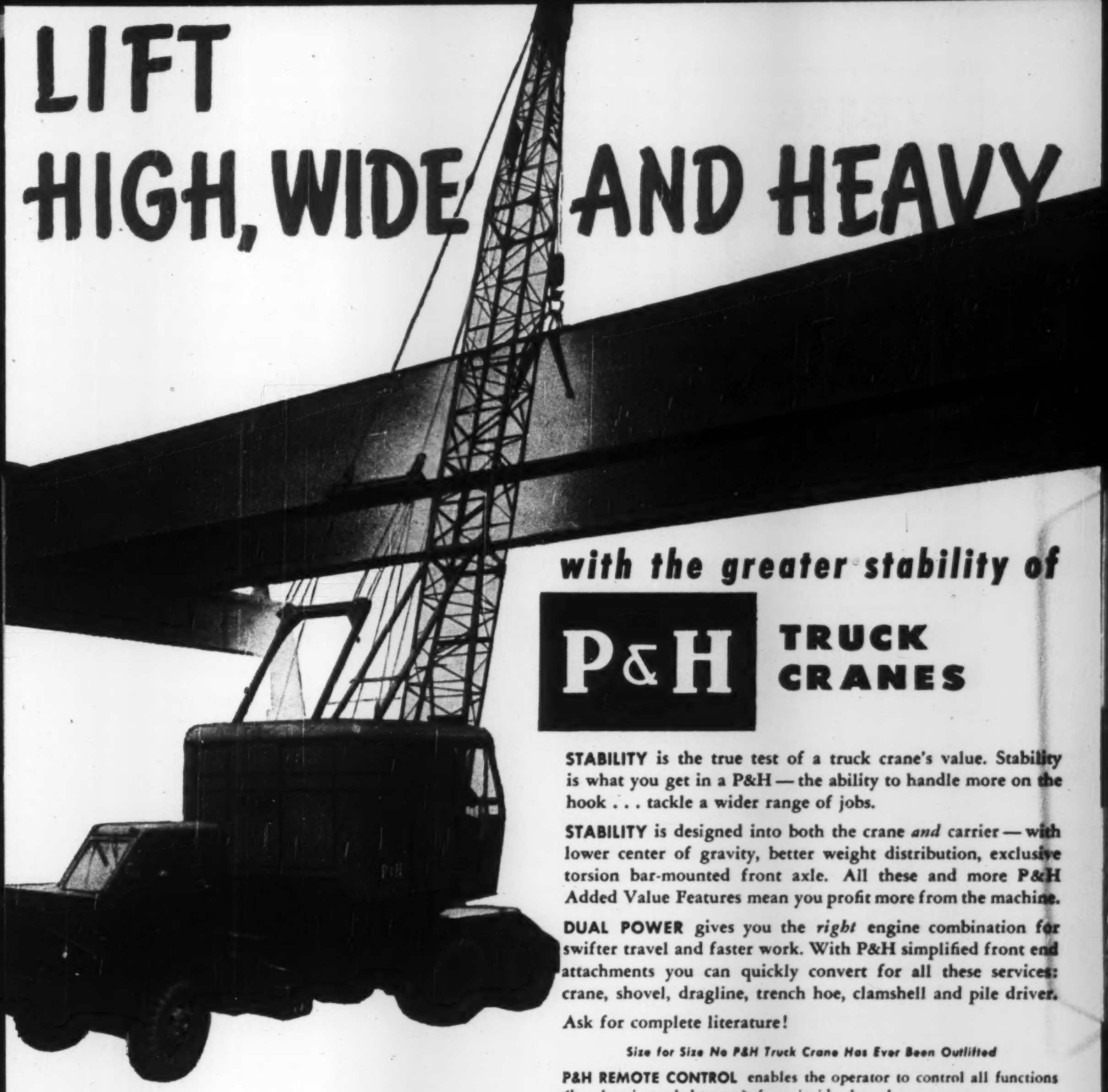

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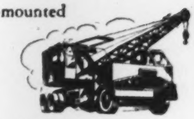

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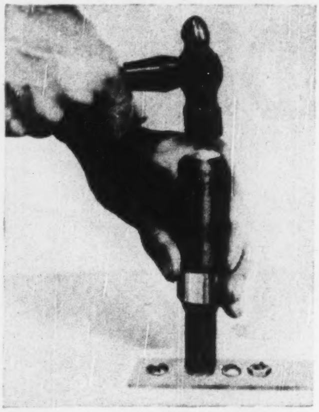
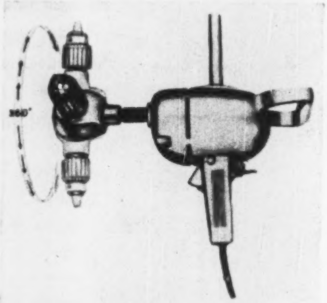


Impact Hammer

Impakdriver translates impact caused by a twist of the handle and a rap with a hammer into a high degree of torque. It is recommended for tightening or loosening screws, bolts, or nuts. It is particularly useful for starting stubborn units that are rusted or frozen on, or for working in hard-to-get-at places.—H. K. PORTER, INC., SOMERVILLE, MASS.

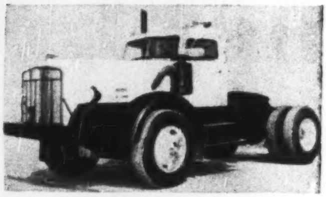


All-Angle Head Drill

Two-speed drill—275 rpm for deep boring; 1100 rpm for small holes and drilling lumber—has a head that rotates through 360 deg. Set at a right angle, the tool measures 7½ in. over-all width, permitting drilling of joists set on 12-in. centers. Capacities of the drill range from ½ in. in steel to 4 in. in soft wood.—CUMMINS PORTABLE TOOLS, 4740 RAVENSWOOD AVE., CHICAGO 40, ILL.

Wire Connector

Set-screw-type connector is available for 600-v applications, and as a pressure cable connector for general use in all branch circuit wiring. It is recommended for use on conduit, armored cable, non-metallic cable, and open wiring. The extra-long skirt covers the wire insulation and is said to protect the splice and eliminate flash-overs. The set screw connector is available in Nos. 11 and 22 sizes.—IDEAL INDUSTRIES, INC., 1368 PARK AVE., SYCAMORE, ILL.



Lightweight Tractor-Truck

Powerful, lightweight tractor-truck meets low gross weight restrictions while utilizing a heavy-duty engine. The W Series features a short wheelbase measuring 144 in.-72 in. CA. Front-mounted steering gear is said to provide easier steering and a good steering-wheel position. The W Series is available with gasoline or diesel engines up to 200 hp. Transmission and axle combinations are chosen to meet particular gross weight requirements.—WARD LAFRANCE TRUCK CORP., ELMIRA, N. Y.

New Product Briefs

Protective mask consists of an aluminum shield held in position by an adjustable elastic head band, and replaceable laminated filters. The G-S mask weighs less than ½ oz. Made by: General Scientific Equipment Co., Philadelphia 32, Pa.

Roof drain (Josam Series 4650) is designed for installation on flat roofs with steel decks where connecting leader does not provide for adequate expansion and contraction. Maker: Josam Mfg. Co., Cleveland 13, Ohio.

Cooling towers are reputed to overcome the problems of corrosion commonly found in evaporative water coolers when air and water are brought together. Body and packing of the Models TE-10 and TE-15 are of asbestos-cement sheets; all parts used for assembly and operation are made of non-rusting copper alloys; and blower and frame are protected by heavy hot-dipped galvanizing. Maker: Servel, Inc., Evansville, Ind.

Ten-inch toolroom lathe is driven by a ½-hp. motor. Headstock is back-geared, providing spindle speeds ranging from 48 to 1,435 rpm. Distance between centers varies from 16⅛ to 28⅛ in. Maker: South Bend Lathe Works, South Bend 22, Ind.

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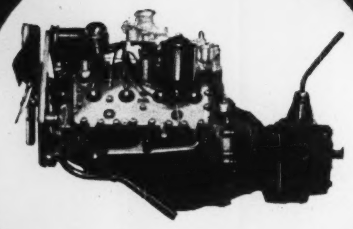

Ford 239 V-8 Industrial Engine, with four-speed transmission. (Displacement—239 cu. in.)

Athey APCOR Products

A Ford Industrial Engine is the power plant for the Athey Force-Feed Loader, made by the Athey Products Corporation of Chicago. In such highway maintenance operations as loading scarified macadam and excess windrowed dirt, as well as piled leaf and snow removal in urban areas, this self-propelled loader has demonstrated its effective and economical operation in the hands of hundreds of operators. Where power, reliability and ease of service are important, Athey finds Ford Industrial Engines *right* for their product.

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MANUFACTURERS' PUBLICATIONS

All-Purpose Excavator—Bulletin 400 describes the Marion Type 43-M all-purpose excavator. The bulletin lists and illustrates varied applications of the 43-M as a shovel, dragline, clamshell, crane, backhoe, and pile driver. Features listed include: Ease of front-end conversion, air control, independent boom hoist as standard equipment, only two horizontal shafts on the machinery deck, and 22 important friction points are equipped with ball or roller bearings.—MARION POWER SHOVEL CO., MARION, OHIO.

Masonite Hardboards—Use and application of Masonite hardboards as they pertain to building construction and remodeling are listed in this 24-p guide. The booklet lists the Masonite products, describes their manufacture and adaptability, and lists their physical properties. Application data cover cutting and bending, adhesives and nailing, and finishing.—MASONITE CORP., 111 W. WASHINGTON ST., CHICAGO 2, ILL.

Shielded Arc Welding—Important advances in shielded arc welding are the subject of Lincoln Bulletin 1303. The folder lists several advantages claimed for this type of welding including: Cuts welding cost, minimizes weld distortion, produces smooth welds, and cuts spoilage losses. The bulletin describes the basic principle of this type of welding, and contains a complete description of the equipment required. Welding procedures are also covered.—THE LINCOLN ELECTRIC CO., 12818 COIT, CLEVELAND 1, OHIO.

Maintenance Problems—Portfolio discusses equipment and building maintenance problems and lists recommendations for economical upkeep. The portfolio features a description of specialized paint coatings for resisting moisture, fire, mildew, and chemicals. —THE WILBUR & WILLIAMS CO., GREENLEAF & LEON STS., BOSTON 15, MASS.

Adhesives; Coatings; Sealers—Properties of over 100 industrial adhesives, coatings, and sealers are tabulated in this illustrated catalog. Tables in this 32-p booklet list the properties of 64 adhesives for bonding metal, rubber, glass, plastics, fabrics, and wood to themselves and to other materials; 18 sealers used in various manufacturing processes; and 12 coatings for protecting metal against corrosion and abrasion, for thermal insulation of motor housings, and for sound deadening of metal panels. Also described are strippable coatings and 15 Coro-Gard protective-coating systems. In addition, there is a separate section describing specialized adhesives, coatings, and sealers for the construction trades.—MINNESOTA MINING & MFG., CO., 900 FAUQUIER ST., ST. PAUL 6, MINN.

Asphalt-Road Planer—Heater planing of asphaltic surfaces is the subject of this 8-p catalog. The catalog describes the development of this type of treatment for rejuvenating cracked, rolled, or broken pavement; lists important features of the 1950 Heater Planer; and describes the principal advantages of heater planing.—PAVEMENT PLANING CO., 259 W. 3RD SOUTH ST., SALT LAKE CITY 1, UTAH.

Diesel Pile Hammer—Self-contained Model 1417 diesel pile hammer is illustrated and described in folder KB-9. The folder contains complete information on the use of diesel power for this type of equipment, describes its construction briefly, and lists features of operation. Complete specifications and dimensions are listed.—SYNTRON CO., 328 LEXINGTON AVE., HOMER CITY, PA.

Caterpillar Service Bulletin—"Service Reporter" is the title of a new publication. Written informally, it features helpful hints and basic information on how to keep Caterpillar equipment in good working condition. Published quarterly, each issue contains subjects applicable to every owner, and is not confined to one class of equipment. Circulation is through approved dealers.—CATERPILLAR TRACTOR CO., PEORIA 8, ILL.

Permalite Job Data—Fifty-page brochure contains job data on typical Permalite projects. These typical jobs cover the use of lightweight Permalite plaster or concrete in many applications. Included are examples of Permalite's use in base-coat plaster, plaster fireproofing of structural steel, acoustical plaster, and Permalite lightweight insulating concrete for roof decks, floor fills, and curtain walls.—GREAT LAKES CARBON CORP., 18 E. 48TH ST., NEW YORK 17, N. Y.

Aluminum Extrusions—Basic engineering principles for most effective use of extruded aluminum shapes are ex-

(*Continued on next page*)

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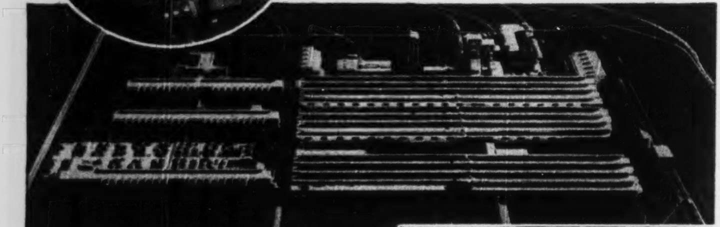
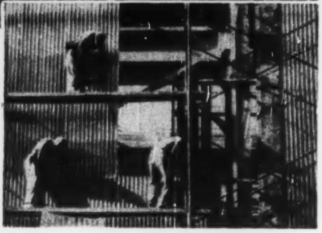




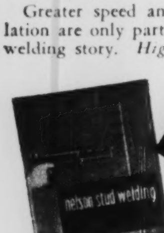
1,800,000 sq. ft. Alcoa Corrugated Aluminum Roofing and Siding Secured With Nelson Studs

Using the Nelson Rivweld method of fastening, the Jamar-Olman Company broke all records in erecting the walls and roofs of the 25 buildings at the Aluminum Company of America Point Comfort Works—the largest single installation of aluminum industrial corrugated sheets in history.

First, all Rivweld studs were speedily end-welded to purlins and girts, then the sheeters went to work. Single 4-man roofing crews installed up to 6,000 sq. ft. per day; single 3-man siding crews up to 4,000 sq. ft. in a day.

Greater speed and lower cost installation are only part of the Nelson stud welding story. *Higher quality installation* is another important advantage of this remarkable topside method of fastening. That's the reason why leading manufacturers of corrugated aluminum, steel and asbestos roofing and siding now recommend this application method and are making Nelson fasteners available with their materials.

Get all the facts now about this superior method of fastening and its many uses in construction. Nationwide field engineering service.



SEND FOR BOOKLET
"Nelson Stud Welding in the Construction Industry"

NELWELD

Nelson Stud Welding
DIVISION MORTON GREGORY CORPORATION
2763 TOLEDO AVENUE LORAIN, OHIO

plained and illustrated in the 1950 edition of "Designing with Aluminum Extrusions". The book breaks down the advantages of the extrusion process into eight principles of design. Then each of these is illustrated and explained in detail by use of diagrams, charts, and pictures of actual parts. Since certain shapes are used as structural or load-carrying members, a chapter is devoted to the principles of structural design. Characteristics, properties, dimensions, and cost factors are covered. Copies are available by writing on company letterhead.—Reynolds Metals Co., 2500 S. 3rd St., Louisville, Ky.

Stockpile Protection—Informative data folder describes the use of Sisalkraft for stock-pile protection. Of a timely nature, it is especially concerned with the protection of abrasives for ice control.—The Sisalkraft Co., 205 W. Wacker Drive, Chicago 6, Ill.

Mortarproofing Brick Walls—Causes of leaky brickwork and how they can be attacked with the help of Omicron Mortarproofing are discussed in a 16-p booklet. Featured, are tests by leading laboratories showing how "O. M." acts as a cement-dispersing water-reducing mortar admixture. The booklet lists the benefits said to accrue through the use of this material.—The Master Builders Co., 7016 Euclid Ave., Cleveland 3, Ohio.

Overhead, Front-End Loader—Lodover 1-yd combination overhead and front-end shovel is described in a new 8-p catalog. The catalog describes how the Lodover speeds production by its overhead system of loading. Other features claimed are also discussed in detail.—Service Supply Corp., 20th & Erie Ave., Philadelphia 32, Pa.

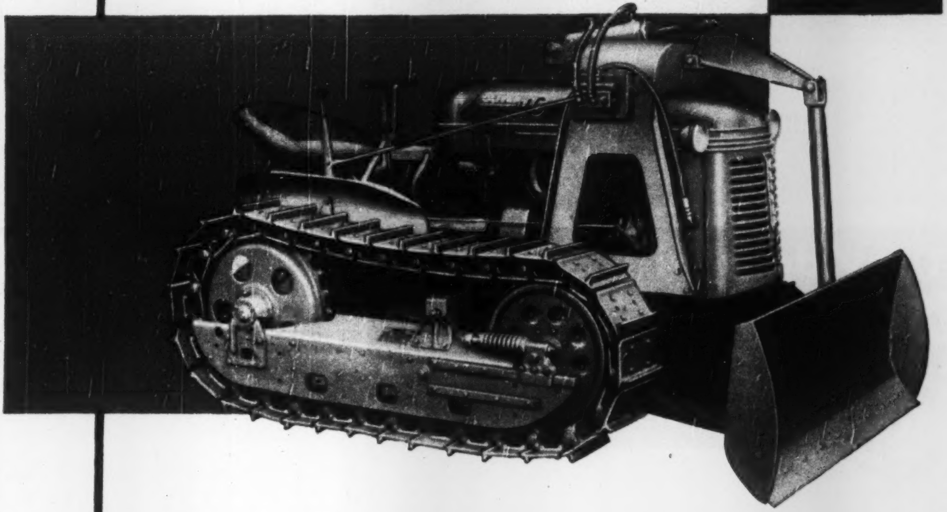
Air-Entrainment Meter—Operating instructions for use of the Techkote White air meter for measuring entrained air in concrete are contained in this 4-p folder. The bulletin illustrates the component parts of the meter, explains the purpose of each part, explains how to assemble the meter, and show how to run a test. The folder also describes a system for field checking of the meter. Complete specifications and dimensions are listed.—Techkote Co., Inc., 821 W. Manchester Ave., Inglewood, Calif.

Fluid Pressure Boosters—Twelve-page bulletin B-200 tells how to use fluid pressure boosters to step up applications accomplished by compressed air or hydraulic power. When to use boosters in place of air cylinders, when

(*Continued on page 130*)

More strength . . . **More** power . . . **More** everything

..in the NEW OLIVER "HG"



There's *more* of everything you want in a crawler tractor in the NEW Oliver Model "HG." This new little crawler tractor is "big" with performance-making features because it was *field designed* . . . designed to meet the specifications that users said they wanted.

The NEW OLIVER "HG" Has More Strength

To handle the extra load and strains of mounted equipment, the main frame, transmission case and drawbar bracket assembly have been materially strengthened. No loads are imposed on final drive spacer casting. Power take-off is heavier . . . stronger.

Front wheels have been increased 50% in material thickness for longer life. Wheel flanges are on the outside of the track rails for better track alignment. New, heavier type track frame guide supports and buffer springs add strength to handle mounted equipment.

Final drive has been redesigned for greater physical strength and durability.

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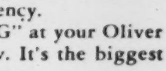
The new "HG" engine gives you more drawbar horsepower . . . extra power to handle bigger loads . . . extra efficiency.

Check the new Oliver "HG" at your Oliver Industrial Distributor's now. It's the biggest little tractor you've ever seen.



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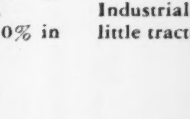

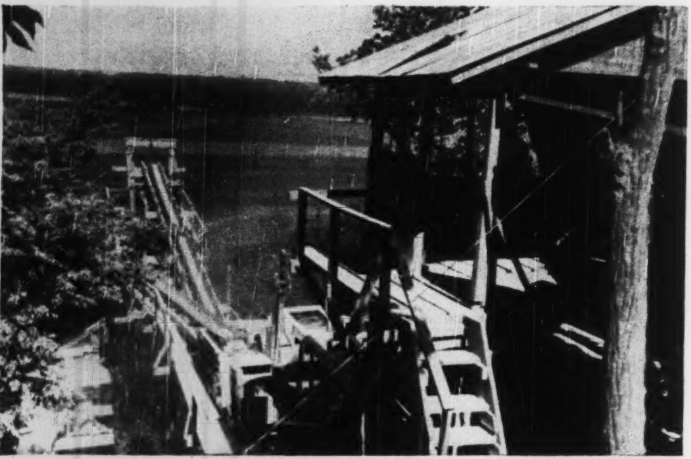

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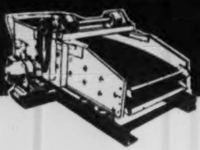

for trouble free operation the year around.

A 4' x 12' three-deck Deister Vibrating Screen used by Hayes Quarries, St. Joseph, Mo., handles an average of 90 to 100 tons of crushed rock an hour—grades and sizes 1½" and ¾" concrete rock, ½" asphalt rock and ¼" chips accurately and efficiently.

This quarry operates six days a week on a year-round basis, with the work-day for the Deister Screen ranging from eight to 10 hours. Quarry Manager F. J. Shields says: "I've had experience with all makes of vibrating screens, and the Deister is a good screen. We've had trouble-free operation from our Diester Screen."

Performance and maintenance records established by Deister Vibrating Screens in all types of quarries and gravel plants are proof of their dependable versatility. They run longer with less trouble because of their rugged, all-welded construction . . . grade faster . . . size more accurately. There's a Deister Vibrating Screen for your job. Write for our engineering recommendations and complete information.

DEISTER SCREENS

DEISTER MACHINE CO.

FORT WAYNE 4, INDIANA

to use them in place of hydraulic pumps, and how to select the proper size, model, and type of booster best suited for a particular application are all fully covered in the comprehensive bulletin. Circuit diagrams, simplified formulas for calculating boosters, illustrations and descriptions of actual models, together with mounting and dimensional data, and a booster selector chart, are also given.—MILLER MOTOR CO., 4027 N. KEDZIE AVE., CHICAGO 18, ILL.

Cold-Pressure Welding—Catalog describes Koldweld process of joining metals without heat or electricity. The catalog describes the process and its theory; indicates several typical applications and types of welds; describes the equipment required; and lists other relevant data for prospective users of this process.—KOLDWELD CORP., 10 E. 40TH ST., NEW YORK 16, N. Y.

Reinforcing Bars—Bar card shows standards weights and numbers for steel reinforcing bars. The new card covers latest ASTM specification A-305. The card serves as a ready reference chart of weights and nominal dimensions for standard sizes of steel reinforcing bar from ¼ through 1¼ in. Bar sizes are listed both by inches and numbers. Listed on the back are standard ASTM designation numbers for reinforcing bars, including those covering grades of steel and deformed bars. The card measures 8½x11 in.—CONCRETE REINFORCING STEEL INSTITUTE, 38 S. DEARBORN ST., CHICAGO 3, ILL.

Movie on Garrison—Full-color 16-mm sound film is entitled, "The Garrison Story". It is a documentary of Garrison Dam, and its part in the over-all development of the Missouri River Valley. Featured are flood and drought scenes taken in the Missouri Basin. Various construction phases and glimpses into the Missouri Valley of tomorrow and other interesting highlights of this huge project are also covered.—THE EUCLID ROAD MACHINERY CO., CHARDON ROAD, CLEVELAND 17, OHIO.

Flexible Hose Lines—Information on hose and fittings and instructions on how to assemble them are included in Bulletin 113. Featured in the bulletin is a description of self-sealing and breakaway couplings. Complete dimensions and thread data are provided for each fitting listed in the bulletin. —AEROQUIP CORP., JACKSON, MICH.

Wire Rope—Recommendations for the "one best" wire rope for each job are listed in Bulletin DH-160. This informative folder is one of a series listing specific reasons for recommending certain ropes. This folder deals with Winch Line rope which has these specifications: 3x36 Seale, Tru-Lay preformed, improved plow steel, and independent wire-rope core. The folder stresses advantages of this rope when used on any type of winch machinery. —AMERICAN CHAIN & CABLE CO., INC., AMERICAN CABLE DIVISION, WILKES-BARRE, PA.

Portable Steam Boilers—Four-page folder describes the Bros line of portable steam boilers. The folder lists three models (26, 41, and 55 generated horsepower), available in four body types. Included with the folder is a 4-p data sheet illustrating special portable boiler units, including electric, oil-fired, and gas-fired units. The Bros heaters are recommended for heating tank cars of bituminous material; for pile driving by steam hammers; for heating storage tank coils; and for heating and thawing catch basins.—WM. BROS BOILER & MFG. CO., 1057 TENTH AVE., S. E., MINNEAPOLIS 14, MINN.

Littleford Equipment—Black-top road maintenance and construction equipment are described in Catalog AA. This catalog contains a brief description of each item in the Littleford line. It is not intended to provide technical data or specifications. Items described include: Kettles, joint and crack-filling pots, tool heaters, emulsion sprayers, Kwik-Steam vapor generators, all-steel mortar boxes, paving tools, pressure distributors, road brooms, salamanders, supply tanks, surface heaters, tool boxes, Trail-O-Roller, Trail-O-Distributors, transfer pumps, and weed burners. Each item is illustrated, accompanied by a brief description of its general features.—LITTLEFORD BROS., 453 E. PERAL ST., CINCINNATI 2, OHIO.

Vibratory Soil Compactor—Compaction of soil by vibratory pneumatic-tired rollers is the subject of this 16-pager. Featured, is a description of advantages of mounting the vibrator unit on the axle. Emphasizing the importance of proper compaction, the bulletin gives a detailed description of the action of the Cedarapids Compactor, illustrated with drawings which show what happens to the soil under compaction. In addition to a complete description of construction details of both the Model 60 and Model 25, Bulletin COMP-3 contains a number of actual job test reports made on various types of soil.—IOWA MFG. CO., CEDAR RAPIDS, IOWA.

ADVERTISERS IN THIS ISSUE

Acker Drill Co	120
Air Placement Equipment Co	101
American Bridge Co	95
American Hoist & Derrick Co	61
American Lumber & Treating Co	122
American Mutual Liability Insurance Company	66, 67
American Steel & Wire Co	4, 63
American Steel Dredge Co., Inc	106
Armco Drainage & Metal Products, Inc	16
Bethlehem Steel Co	80
Blaw Knox Div. Blaw Knox Co	50
Buff & Buff Mfg. Co	106
Carnegie Illinois Steel Corp	54, 55
Cast Iron Pipe Research Assoc., Inc	12, 13
Caterpillar Tractor Co	8, 9
Cement Gun Company	90
Century Geophysical Corp	89
Chicago Bridge & Iron Co	2nd Cover
Chrysler Corp.	58
Clearprint Paper Co	51
Cleveland Trencher Co	87
Concrete Surfacing Machinery Co	124
Concrete Termite Drill Co	91
David House Moving Co., E. F	88
Deister Machine Co	130
Dravo Corp.	88
Earle Gear & Machine Co	104
Economy Forms Corp	64
Faber-Castell Pencil Co., A. W	60
Ford Motor Co	126
Friden Calculating Machine Co., Inc	62
General Electric Co	14, 15
General Motors Truck Div. G.M.C	72, 73
Georgia-Pacific Plywood Co	78, 79
Goodrich Co., The, B. F	3
Gordon Smith & Co., Inc	81
Griffin Wellpoint Corp	124
Gunite Concrete & Construction Co	92
Gunite Florida Service, Inc	104
Gurley, W. & L. E	69
Harnischfeger Corp.	123
Hartford Fire Insurance Co	52
Hayward Co.	104
Heltzel Steel Form & Iron Co	11
Henschel & Co., Inc., John	48
Herman Nelson Div., American Air Filter Co., Inc.	18
Hyatt Bearings Div., G.M.C	84
The Hyster Co	125
Independent Pneumatic Tool Co	98
Indiana Gunite & Construction Co., Inc.	100
International Steel Co	106
Irving Subway Grating Co	85
Jaeger Machine Co	85
Jahn Trailer Div	93
Jeffrey Mfg. Co	56
Jones & Laughlin Steel Corp	75
Keasbey & Mattison Co	53
Kennedy Valve Mfg. Co	91
Kinnear Mfg. Co	96
Ladish Co.	Insert 49
Lamson & Sessions Co	7
LaPlant-Choate Mfg. Co	1
LeRoi Co.	74
LeTourneau, Inc., R. G	70
Leupold & Stevens Instruments, Inc	2
Lincoln Electric Co	76
McKiernan-Terry Co.	104
Merritt-Chapman & Scott Corp	6
Mixermobile Mfg. Co	105
Moretrench Corp.	92
Murphy Diesel Corp	5
Nelson Stud Welding Div., Morton Gregory Corp.	128
Norma Pencil Co	127
Oliver Corp.	129
Owen Bucket Co	93
Philadelphia Gear Works	10
Phoenix Bridge Co	92
Powder Power Tool Corp	59
Ramset Fasteners, Inc	68
Raymond Concrete Pile Co	3rd Cover
Republic Steel Corp	22
Rodgers Hydraulic, Inc	46
Rogers Bros., Corp	106
Sauerman Bros., Inc	90
Sherman Products, Inc	83
Sika Chemical Co	77
SKF Industries, Inc	20
Sparling Meter Co	100
Sprague & Henwood, Inc	90
Standard Oil Co. of Indiana	65
Taylor Forge & Pipe Works	37
Timber Structures, Inc	103
Timken Roller Bearing Co	4th Cover
Trailer Village, Inc	88
Tri-Lok Co.	88
U. S. Steel Subsidiaries	4, 54, & 55, 63, 95
Weinman Pump Mfg. Co	57
Wellman Engineering Co	100
Welsbach Corp., The	90
Yeomans Brothers Co	97

Professional Services	**117**

SEARCHLIGHT SECTION

(Classified Advertising)

Employment	
Positions Vacant	112, 113
Selling Opportunities Offered	112, 113
Positions Wanted	112, 113
Part Time Work	113
Employment Services	112
Special Services	**113**
Educational	
Schools	113
Notices	
Proposal	109-111
Equipment	
(Used or Surplus New)	
For Rent	114, 116
For Sale	113-117
Piling	115
Pipe	116
Rail	116
Surveying Instruments	114
Wanted	
Equipment	113
ADVERTISERS INDEX	**111**

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Taxes, and the escape hatch

In a gigantic tilt for the profit dollar, interests of the right and left are locked in serious battle.

Outcome of the struggle vitally affects the construction industry, with all others who anxiously watched as the House Ways and Means Committee convened this week to determine the conditions of the 1951 excess profits tax.

• **Lineup**—To the right is the Committee for Economic Development calling for a flat defense tax of 15% on all corporate income in addition to the 38% corporate income tax.

CED is the privately endowed group of economic experts whose staff serves as a quasi-official braintrust to American industry and government.

Although some of its experts dissent from taxation of corporate income beyond the 50% point (the proposed plan would tax at around 53%) there was no dissent from a proposal to continue and enlarge excise taxes and raise personal income taxes around 5%.

CED estimates that the overall effect of its tax increases would bring around $6 billion of new revenue to the Treasury for 1951—enough to balance the budget. Of this, around $3 billion would come from the corporate defense tax of 15%. The second $3 billion would accrue from excise and personal income tax hikes.

To the left is the CIO which is to produce a plan that will raise between $7 and $10 billion in revenues each year.

• **And the CIO**—Without resort to unpopular excise and personal income tax hikes that the unions will oppose, CIO economists argue that all U. S. corporations should be allowed only some $15 billion of profits annually after paying income taxes to the government.

Their figure is arrived at by granting a 50% increase in the after-tax average earnings of 1942 through 1945. However, since 1946 corporate income has run almost 80% above the base level.

With corporate profits for 1950 running at an annual rate of around $40 billion, the CIO proposal would drain off in taxes some $25 billion a year as against the current tax burden of $17 billion representing all corporate taxes paid. The increase to the government would be an extra $8 billion, more than enough to balance the 1951 budget.

Behind CIO thinking are three factors:

(1) If corporations pay higher income taxes, it may not be necessary for the government to increase personal income taxes.

(2) If corporations have to pay out the major portion of their profits in taxes, the incentive to keep costs down and resist wage-hike demands will be fairly well spiked.

(3) Union leaders also see an obvious political advantage in striking out at "big business."

Between these positions is Congress and the Treasury.

• **The tax**—To water down wage-hike demands from unions during the period ahead Congress presumably would like to see an excess profits tax on the books. But no drastic measure such as proposed by some CIO officials is planned.

A milder tax of between 65% and 75% on excess is expected to bring in around $3 billion of additional money at the present level of business activity and still not encourage corporations to spend wastefully on entertainment and needless personnel as during World War II under the 95% excess profits tax.

In addition, the Treasury and Congress are definitely thinking of jacking corporate income taxes up to 50%, from the current 45%. They hope this increase will bring in another $2 billion for an overall income of $5 billion from increased tax rates on industry earnings. This is still below the $6 to $7-billion excess profits tax levy that was being talked of when Congress adjourned.

Although the CIO threatens to give battle on this issue and may try to get President Truman to take a stand for heavier corporate levies, the milder tax is expected to come through—barring unforeseen international developments.

This will be a compromise between right and left as currently conceived. It will please few, but give industry some incentive to resist wage increases, and unions to desist from pushing for them.

• **Land of no return**—Tax experts of the Treasury and the House plan a measure that will be as fair as possible.

Specifically exempted will be all corporations and partnerships engaged in personal services. This would include consulting engineers, consulting contractors, architects, accountants, lawyers and other professional people of the service industries. Those who qualified for exemption under section 725 of the World War II excess profits tax law will again be exempted. The provision planned for service industries will be the same as then. Businesses not in these categories will pick up the new check.

Many features will be old acquaintances for business men of World War II.

Attacking from three directions, the authors of the new measure will seek to make allowances for growing corporations whose "normal" earnings show a straight-line increase over the past four years. Such companies have dreaded a static profit base.

Depressed industries that have not done well during the postwar era will also be given consideration, as will companies of large capital investment.

• **The escape hatch**—Schemes now being brought out of the bag in Washington include the following:

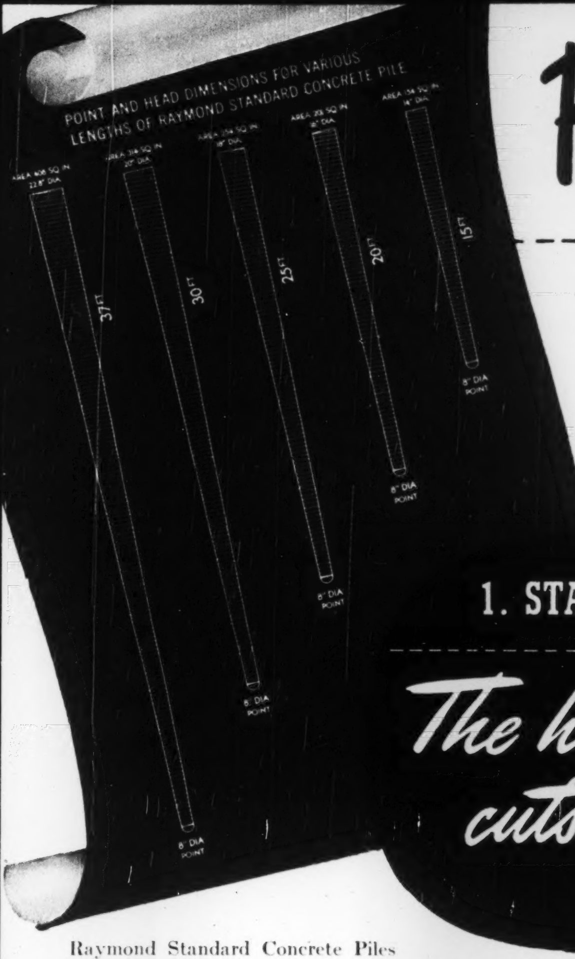
For companies of depressed earnings since 1946, such as aircraft, textile and aluminum firms an allowed selection of their three best earnings years since '46 as the basis for "normal" profit.

For corporations with a record of straight-line growth, the best year of the 1946 to 1949 period (it would be 1949) as a weighted factor in estimating "normal" profit.

Also up for consideration is the World War II arrangement which allowed a corporation to establish its base either on a three-year average, or a schedule of allowed return on invested capital.

Popular with many officials is the following schedule of returns: 8% on the first $5 million; 7% on the second $5 million; 6% on the next $190 million; and 5% on any corporate structure of more than $200 million.

If all these areas of no return are roped off from the government by the new tax legislation now first on the docket as Congress reconvenes, corporate officials may be reasonably sure of income statements showing profits not too far removed from 1950 earnings even after allowance for excess profits tax.


POINT AND HEAD DIMENSIONS FOR VARIOUS LENGTHS OF RAYMOND STANDARD CONCRETE PILE
AREA 408 SQ IN 22.8" DIA
AREA 314 SQ IN 20" DIA
AREA 254 SQ IN 18" DIA
AREA 201 SQ IN 16" DIA
AREA 154 SQ IN 14" DIA
37FT
30FT
25FT
20FT
15FT
8" DIA POINT
8" DIA POINT
8" DIA POINT
8" DIA POINT
8" DIA POINT

Raymond MAKES 5 TYPES OF CONCRETE PILES

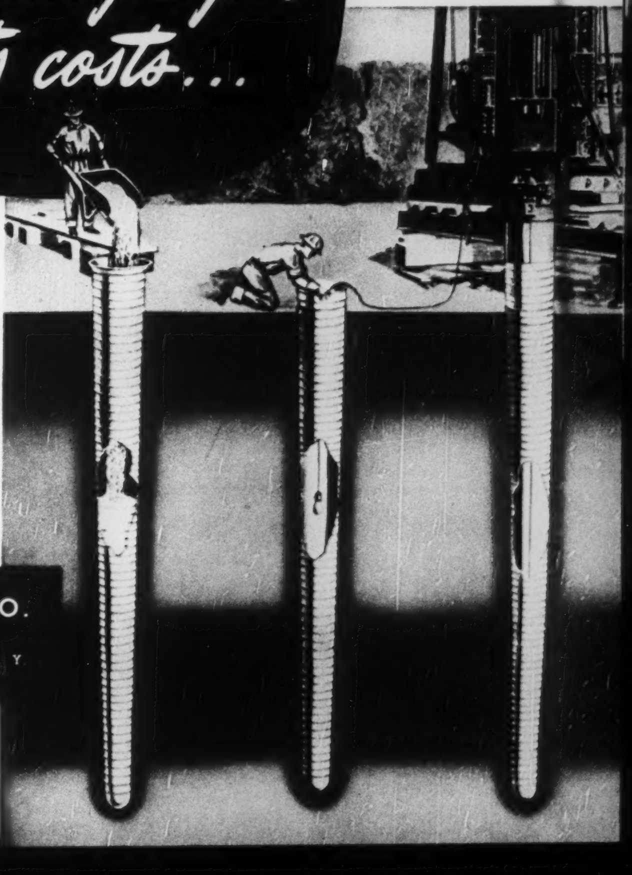
1. **STANDARD**
2. **STEP-TAPER**
3. **PIPE STEP-TAPER**
4. **COMPOSITE**
5. **GOW CAISSONS**

Raymond installs every type of pile: cast-in-place concrete, precast concrete, steel pipe, wood and H-beam. Raymond operations include underpinning, borings and soil investigations, waterfront construction and harbor and river improvements.

1. STANDARD PILES

The heavy taper cuts costs...

Note that the permanent steel shell maintains the soil pressure developed during driving and while the concrete is setting, thus insuring a perfect pile free from distortion with a high load capacity.



Raymond Standard Concrete Piles have a heavy, uniformly tapered permanent steel shell. On friction piles, this taper acts like a wedge, giving these specific advantages:

1. Driving resistance is maintained.
2. The load is transmitted to the soil through the entire length of the pile.
3. The load can be carried by shorter piles, because of their greater carrying capacity.
4. Since shorter piles cost less to drive, the taper usually results in substantial savings.

Each of these statements has been tested and proved innumerable times. The evidence is at your disposal at any of our offices. Your inquiry is cordially invited.

Raymond CONCRETE PILE CO.

140 CEDAR ST., NEW YORK 6, N. Y.

BRANCH OFFICES: Boston, Syracuse, Philadelphia, Baltimore, Washington, Pittsburgh, Atlanta, Miami, Houston, Kansas City, St. Louis, Cleveland, Chicago, Detroit, Portland, San Francisco, Oakland, Los Angeles and principal cities in Latin America.

New Le Tourneau steering motor is mounted on TIMKEN® bearings!

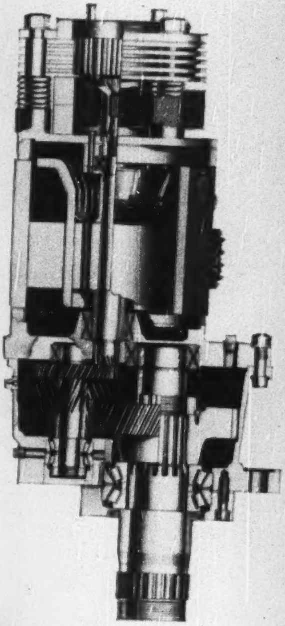
R. G. Le Tourneau, Inc. has developed a revolutionary new high-starting-torque electric motor for auxiliary power systems. It is now being used to power the steering unit on the Tournapull C Roadster with Model E16 Carryall shown here. The gear drive shafts are mounted on Timken® bearings to insure long life and trouble-free performance.

Due to the tapered design of Timken tapered roller bearings, they take radial and thrust loads in any combination. Shafts and adjacent moving parts are held in positive alignment. Gears mesh accurately and wear is reduced. The true rolling motion and incredibly smooth surface finish of Timken bearings practically eliminate friction. Line contact between the rollers and races provides maximum load-carrying capacity.

Maintenance and lubrication time are kept to a minimum because Timken bearings permit tighter closures. Lubricant is retained, dirt and moisture are kept out. Normally Timken bearings last the life of the machine since they are (1) engineered for the job, (2) made of Timken fine alloy steel, (3) precision manufactured.

For assured dependability and low-cost performance for more years, insist on Timken bearings in the machines you buy or build. Look for the trade-mark "Timken" on every bearing. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

This symbol on a product means its bearings are the best.



R. G. LE TOURNEAU, INC. uses Timken bearings on the gear drive shafts of this high-starting-torque electric steering motor used on the Tournapull C Roadster with Model E16 Carryall shown below. Timken bearings keep shafts in positive alignment, keep gears meshing correctly and reduce wear on adjacent moving parts. Other Timken bearing applications on the Tournapull C Roadster are as follows:

2 double row Timken bearings in each No. 2 gear box

1 double row Timken bearing in the transmission adapter assembly

2 Timken bearings on the steering kingpin

2 Timken bearings on the steering trunnion bolt

2 Timken bearings in the differential assembly

1 Timken bearing on each final drive pinion.

WE MAKE OUR OWN STEEL

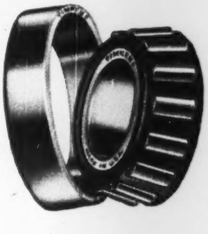
The special grade alloy steel which gives Timken bearings their strength and resistance to wear, is made in our own steel mills.

The Timken Roller Bearing Company is the acknowledged leader in: 1. advanced design; 2. precision manufacturing; 3. rigid quality control; 4. special analysis steels.

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

TAPERED ROLLER BEARINGS



NOT JUST A BALL ○ NOT JUST A ROLLER THE TIMKEN TAPERED ROLLER BEARING TAKES RADIAL AND THRUST LOADS OR ANY COMBINATION